

# ANIMAL KEEPERS' FORUM



**MARCH 2008**

The Journal of the American  
Association of Zoo Keepers, Inc.



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# Table of Contents

About the Cover/Information for Contributors.....	86
Scoops & Scuttlebutt.....	87 - 88
Coming Events.....	90
AAZK Announces New Members.....	91
AAZK Award Nominations Are Now Being Accepted for 2008.....	92 - 94
Now Available - <i>Crisis Management in Zoos</i> - Info and Order Form.....	95 - 96
Enrichment Options ( <i>The Confetti Bottle</i> ).....	97 - 99
National Elephant Center Formed.....	100 - 101
REMINDER: Third Call for Papers for '08 AAZK Conference.....	101
Hand-Rearing a Giraffe at Miami MetroZoo.....	102 - 105
Attention Photographers!! AKF Seeks Color Photos.....	105
ATC Column ( <i>Injection Training 1.1 North American River Otters</i> <i>Using PVC Chute</i> ).....	106 - 108
Evaluating Enrichment: A Pilot Study with Broad Applications.....	109 - 113
Bowling for Rhinos Funds Distribution for 2008.....	114
Bowling for Rhinos 2008 Notice.....	115
Use of an Enrichment Program to Control Feather Destructive Behaviors in a Female Mauritius Pink Pigeon ( <i>Columba mayeri</i> ).....	116 - 120
Book Reviews ( <i>A Snake Hunting Guide; Hand-Rearing Birds; Life at the Zoo;</i> <i>and 'Twas the Day Before Zoo Day</i> ) .....	121 - 122
Conservation/Legislative Update.....	123 - 128



34th Anniversary - 1974 - 2008

## MISSION STATEMENT

American Association of Zoo Keepers, Inc.

To provide a resource and a forum of continuing education for the animal care professional and to support zoo and aquarium personnel in their roles as animal care givers, scientific researchers, public educators and conservationists. To promote zoos and aquariums as cultural establishments dedicated to the enrichment of human and natural resources; to foster the exchange of research materials, enrichment options and husbandry information through publications and conferences which will lead to a greater understanding of the needs and requirements of all animals.



*This month's cover features the Sumatran Rhinoceros (Dicerorhinus sumatrensis) drawn by Marie Vester, an artist for the Los Angeles Zoo and Botanical Gardens' Docent Newsletter and a volunteer in the zoo's research department. There are fewer than 300 Sumatran rhinos in the wild and much of their rainforest home has been stripped for illegal logging and clear-cut for crops. These factors compounded by poaching have resulted in the killing of 70% of this species in the last two decades. The cover subject, Andalus, is a five-year-old Sumatran rhino and the first born in captivity in 112 years. His mother Emi was sent from the Los Angeles Zoo to the Cincinnati Zoo in 1995 to breed with Ipuh, the only male Sumatran rhino in captivity in North America. Breeding activity was observed twice and after 475 days, Emi gave birth to Andalus in 2001. When he was two years old, Andalus arrived at the Los Angeles Zoo with his own keeper, Steve Ramo, who had an extensive background working with this species. To make sure Andalus had enough of the ficus leaves he liked most, zoo staff scouted out the different types of trees on private property and asked homeowners to help feed the Sumatran rhino. Now Andalus is at the Sumatran sanctuary recovering from 62 hours in a cage --50 hours in flight and 12 hours in a truck. He is living with four other Sumatran rhinos--three females and a male. It is hoped he will choose a female named Ratu to breed. Ratu was rescued in September of 2005 after she wandered out of Way Kambas National Park. Way Kambas is one of three Indonesian rhino parks supported by funds generated through AAZK's Bowling for Rhinos. Thanks, Marie!*

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKE*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 785-273-9149; FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com< If you have questions about submission guidelines, please contact the Editor.

**Deadline for each regular issue is the 10th of the preceding month.**

**Dedicated issues may have separate deadline dates and will be noted by the editor.**

Articles printed do not necessarily reflect the opinions of the *AKE* staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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**AAZK website Address: [www.aazk.org](http://www.aazk.org)**

**BFR Website: <http://aazkbfr.org>**

# *Scoops & Scuttlebutt*



## **Member's Only Section on AAZK Website**

Have you registered yet for the Member's Only Section on the AAZK website ([www.aazk.org](http://www.aazk.org))? If you haven't, you need to do so now or you will be missing out on lots of great information being made available to AAZK member's only through this password-protected section of the website. Registering is easy - just go to Member's Only on the menu bar at the left on the homepage. Once your membership has been verified by Administrative Office staff, you will be set to explore and take advantage of what all is available to you.

Currently this section includes a downloadable pdf of the *Zoonotic Diseases Handbook*, all past and current issues of the AAZK Chapter e-newsletter *INSIGHT*, the AAZK Operations Manual, and the great series by veteran zookeeper Judie Steenberg entitled *The Keeper's Role in Zoo Animal Health*. From the Animal Training Committee are Behavior Lists compiled from a survey sent to AZA institutions. Data has been compiled to indicate what behaviors are being trained on different taxa or species. The Behavior Lists included are for Cheetah, Felids, Great Apes, Orangutan and Procyon Mustelid Vivverid. The AAZK Enrichment Committee section offers Enrichment Guidelines for Bats, Bears, Birds, Carnivores, Elephant, Fish, Primates, Reptiles and Ungulates. Feel free to print, copy and distribute these guidelines as needed. Most of these guidelines are currently printed in the third edition of the Enrichment Notebook CD-ROM.

Also available is information and applications forms for all of the AAZK grants. These include: AAZK-Geraldine Meyer Professional Travel Grant (2 grants/\$1000 each); AAZK/AZA Advances in Animal Keeping Course Grant (1 grant/\$1000); Conservation, Preservation and Restoration Grant (\$1000); and the Research Grant (\$1000). There are even examples of past successful grant applications for you to reference.

If you are a photographer and plan to submit any photos to AAZK for use in *Animal Keepers' Forum*, you will also find the AAZK Photo Model Release Form in the Member's Only section. Also included in this section are Directories for Institutional Members, AAZK Chapters and AAZK Commercial Members with hyperlinks to many of their websites.

Upcoming by the end of this month will be downloadable pdfs of all the papers, posters and workshops presented at the 2007 AAZK National Conference held at Moody Gardens in Galveston, TX. There are also plans to eventually put up pdfs of papers from the 2006 AAZK Conference held in Chicago, IL and hosted by the Lincoln Park Zoo AAZK Chapter. New items and resources will continue to be added throughout the year.

So, as you can see, there are lots of good resources available to you as an AAZK member in the Member's Only section of the AAZK website. Register NOW at [www.aazk.org](http://www.aazk.org)!

## **Dallas Zoo Offers Field Research Opportunity**

Learn field research techniques and contribute to wildlife conservation during the Dallas Zoo's Wildlife Research Expedition to Mexico May 10-23, 2008. Expedition volunteers will be participating in a study of ocelot behavioral ecology, as well as capturing and banding hawks. For more information, go to [http://www.dallaszoo.org/conservation/cs5\\_wildlife.htm](http://www.dallaszoo.org/conservation/cs5_wildlife.htm)

## **BFR Yahoo® Group Established**

There is a new Yahoo® group email for Bowling For Rhinos Coordinators. If you would like to be part of this email group, please email Barbie Wilson at [rhinobarbie@hotmail.com](mailto:rhinobarbie@hotmail.com). This group offers BFR Coordinators the opportunity communicate with each other on questions about t-shirts, bowling alley prices, how to get more support from your zoo, etc.



### **John Ball Zoo Society Grants Offered**

Applications are now being accepted for the 2008 John Ball Zoological Society Wildlife Conservation Fund Grants program. This program awards grants of \$500-\$2500 each to individuals/organizations involved in conservation of wildlife, improvements in animal welfare at zoos and aquariums, and conservation education programs. For information and application materials visit the John Ball Zoo Society website at <http://www.johnballzoosociety.org/conservation> Application deadline is April 18<sup>th</sup>, 2008.

### **North American Herp Key Still Available**

The widely-acclaimed laboratory guide, *A Key to Amphibians and Reptiles of the Continental United States and Canada* by Robert Powell, Joseph T. Collins and Errol D. Hooper, Jr. is still available. Originally published by the University Press of Kansas in 1998, the Press is pleased to announce an unprecedented fourth printing of the key, which is once again available for use in college and university herpetology courses throughout Canada and the United States. Key Particulars: vi + 131 pages, 257 figures, paperback; ISBN 0-7006-0929-6; Price: \$17.95. To order this title from the University Press of Kansas, call (785) 864-4155 or order from University Press of Kansas, 2502 Westbrooke Circle, Lawrence, KS 66045-4444; website: [www.kansaspress.ku.edu](http://www.kansaspress.ku.edu)

### **Request for Proposals - AZA Conservation Endowment Fund and AZA Amphibian Fund**

The 2008 AZA Conservation Endowment Fund (CEF) application is now available on the AZA website at <http://www.aza.org/ConScience/WhatIsCEF/> Proposals are due by 5:00 pm EDT, Friday, 4 April 2008.

Since 1991, the AZA Conservation Endowment Fund has provided over \$4.5 million to 258 projects in over 50 countries worldwide. The AZA CEF supports the cooperative conservation, research and education initiatives of AZA members and their partners. We welcome a broad range of proposals relating to wildlife conservation and care - research, field conservation, education, animal welfare, animal husbandry and management, and animal health. Please visit <http://www.aza.org/ConScience/PreviousCEF/> to view the list of previous award-winning projects.

Created in honor of 2008 Year of the Frog, the AZA Amphibian Fund directly supports amphibian conservation projects around the world. Proposals must adhere to the CEF application format, timeline, and eligibility guidelines. Preference will be given to projects that build and strengthen AZA members' and partners' capacity to address the global amphibian conservation crisis.

We encourage submission of projects that are responsive to priorities outlined in the Amphibian Action Plan, as well as in situ and/or ex situ projects that address other high-priority amphibian conservation concerns that are not currently being met by ongoing efforts. Projects focusing on multiple taxa including amphibians will be considered for general CEF funding, not for support from the Amphibian Fund. Amphibian-related projects may be considered for general CEF funding as well as support from the Amphibian Fund, as appropriate. For more information, please visit [http://www.aza.org/ConScience/CEF\\_AmphibFund/](http://www.aza.org/ConScience/CEF_AmphibFund/).

In addition to the application forms, a number of resources for applicants are available on the CEF pages of the AZA website. Visit <http://www.aza.org/ConScience/CEFInformation/> If you have any questions about the CEF application or review process, please direct them to [cef@aza.org](mailto:cef@aza.org)

### **RRC Newsletter Available**

Newsletter No. 10 (February 2008) from the Rhino Resource Center is currently available to download gratis as a pdf. To download go to <http://rhinoresourcecenter.decenturl.com/rrc-new-literature-in-the> If you wish, you may send comments or questions to: Dr. Kees Rookmaaker, Chief Editor, Rhino Resource Center at [rhino@rookmaaker.freemove.co.uk](mailto:rhino@rookmaaker.freemove.co.uk)





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# Coming Events

**Training and Enrichment Workshop for Zoo and Aquarium Animals** - April 14 – 18, 2008. Presented by Active Environments and Shape of Enrichment. Hosted by Moody Gardens Rainforest and Aquarium, Galveston, TX, USA. For further information contact: Active Environments, Inc., Tel: 805-737-3700 - E-mail: [info@activeenvironments.org](mailto:info@activeenvironments.org); Or: Shape of Enrichment ([www.enrichment.org](http://www.enrichment.org)); Or: Diane Olsen (Moody Gardens): [dolsen@moodygardens.com](mailto:dolsen@moodygardens.com) OR Margaret Whittaker (Active Environments): [indu22@earthlink.net](mailto:indu22@earthlink.net)

**1st International Wildlife Reintroduction Conference** - April 15-16, 2008 – In Chicago, IL. To be hosted by the IUCN/SSC Reintroduction Specialist Group (RSG) and Lincoln Park Zoo. The theme of the conference will be “Reintroduction Programs: Applying Science to Conservation”. Registration is limited to 275 participants. More information about the conference theme and topics is available at the website <http://www.reintroduction.org>

**The Second UK & Ireland Regional Environmental Enrichment Conference** - April 20-22, 2008 at Bristol Zoo Gardens. 1st Call for Papers and Registration. Go to [www.reec.info](http://www.reec.info) for details or please contact Julian Chapman on [julian.chapman@paigntonzoo.org.uk](mailto:julian.chapman@paigntonzoo.org.uk)

**Animal Behavior Management Alliance (ABMA) Conference** - April 27 – May 3, 2008 - In Phoenix, AZ. Hosted by the Phoenix Zoo, Arizona-Sonora Desert Museum, Reid Park Zoo, and Wildlife World Zoo. The 2008 conference keynote speaker is Dr. Temple Grandin, and the conference includes paper and poster presentations, discussion groups, and workshops on topics including Animal Training 101, Behavioral Enrichment, and Advanced Training Concepts. Remember that AAZK members can receive the discounted members registration rate for the ABMA conference! For more information please visit [www.theabma.org](http://www.theabma.org) or contact ABMA 1st Vice President Raquel Gardner at [rgardner@thephxzoo.com](mailto:rgardner@thephxzoo.com)

**Australasian Society of Zoo Keepers (ASZK) Conference** - May 23-25, 2008 - At Sydney Academy of Sports, Narrabeen, Sydney, NSW Australia. Contact [www.aszk.org.au](http://www.aszk.org.au) or [eo@aszk.org.au](mailto:eo@aszk.org.au)

**Measuring Zoo Animal Welfare** - May 29-30, 2008 in Brookfield, IL, USA. Chicago Zoological Society presents - Measuring Zoo Animal Welfare: Combining Approaches and Overcoming Challenges. Symposium information including registration and abstract submission guidelines are available at <http://www.BrookfieldZoo.org/AWsymposium>

**The 9th International Conference on Environmental Enrichment** - May 31 - June 5, 2009 in Torquay, Devon, UK. First Call for papers and Registration. Go to [www.reec.info](http://www.reec.info) for details.

**International Primatological Society XXII Congress** - August 3-8, 2008 - Edinburgh, Scotland. Online registration is now live. Please click on <http://www.ips2008.co.uk/Registration.html> to register.

**AZA (American Zoological Association) Annual Conference** - September 12-18, 2008 at Milwaukee County Zoo, WI. For more info see <http://www.aza.org>

**35th Annual American Association of Zoo Keepers National Conference** - September 24-28, 2008 in Salt Lake City, UT. The guiding theme, “Elevating Animal Care”, will focus on concepts that highlight professionalism, creativity and initiative in the realm of conservation, education and animal husbandry. Animal care professionals from all related fields are encouraged to submit high quality, original topics for consideration. Abstracts are being accepted for papers, posters and workshops until May 1. For more information, please visit [www.utahaaazk.org](http://www.utahaaazk.org), contact the Utah Chapter AAZK at [utahaaazk@hoglezoo.org](mailto:utahaaazk@hoglezoo.org) or call (801) 584-1784.

**4th IUCN World Conservation Congress** - October 5 - 14, 2008 in Barcelona, Spain. For more info go to <http://www.iucn.org/congress/2008>

**Otter Keeper Workshop** - October 9-12, 2008 - Hosted by the Oakland Zoo in Oakland, CA. The focus of the workshop will be North American river otters and Asian small-clawed otters. Topics will include: captive management issues, enrichment, training, water quality, health care, nutrition, diet, hand-raising, exhibit design, lots of sharing of information between keepers. For more information, contact David Hamilton- call 585-336-2502 or [emaildhamilton@monroecounty.gov](mailto:emaildhamilton@monroecounty.gov)

**Seventh International Aquarium Congress** - October 19-24, 2008 - To be held in Shanghai, China. The theme is “Progress & Conservation: The Role of Aquariums in Protecting the Aquatic Environment”. Main discussion sections include: Conservation and Education, Husbandry and Management, and Progress and Advances. For further information, please contact the IAC Secretariat Office: email – [Secretariat@iac2008.cn](mailto:Secretariat@iac2008.cn) Phone: 86-21-54065152; Fax 86-21-54065150. See the conference website at [www.iac2008.cn](http://www.iac2008.cn)

**Neotropical Primate Husbandry, Research, and Conservation Conference** - October 13-15, 2009 in Chicago, IL. Hosted by the Brookfield Zoo. This conference will focus on a variety of topics pertaining to neotropical primates and will bring together staff from zoological parks, sanctuaries, and universities, as well as field researchers and range country biologists to share the most current information on husbandry, conservation, and emergent issues pertaining to captive and wild populations of neotropical primates. The workshop will include three days of presentations, a poster session, as well as an icebreaker, silent auction, and banquet. Additional information regarding registration fees, travel information, and submission of abstracts will be made available in late 2008. Please contact [vince.sodaro@czs.org](mailto:vince.sodaro@czs.org) for additional information.

**Post Your Coming Events Here**  
email to: [akfeditor@zk.kscoxmail.com](mailto:akfeditor@zk.kscoxmail.com)



# AAZK Announces New Members

Rachel Teran, **Franklin Park Zoo (MA)**; Dani Logue, **Jenkinson's Aquarium (NJ)**; Jacqueline Gregory, **Utica Zoo (NY)**; Justin Bellizzi, **Catoctin Wildlife Preserve & Zoo (MD)**; Anthony Echevarria, Emily Lopez and Candice Lose, **Reston Zoo (VA)**; Eileen Duffy, and Bethany Wlaz, **The Maryland Zoo in Baltimore (MD)**; Heather Lay, **North Carolina Zoo (NC)**; Tiffany Palumbo, **Discovery Cove (FL)**; Ben McGlaughon, Sarah Cook and Heather Sorenson, **Birmingham Zoo (AL)**; Peggy Pellett, **Nashville Zoo at Grassmere (TN)**; Heather N. Carpenter, Tanya J. Willett and Sheri Smith, **Columbus Zoo & Aquarium (OH)**; Denise Wilson, **Akron Zoological Park (OH)**; Mistie Hamilton, **Cincinnati Zoo (OH)**; Sara Deal, **Dallas Zoo (TX)**; Hans Horgensen and Jessica Campbell, **Great Plains Zoo & Delbridge Museum (SD)**; Jill Tade, **Lincoln Park Zoo (IL)**; Bill Steele and Matthew Seguin, **Brookfield Zoo (IL)**; Bethany Gates, **Dickerson Park Zoo (MO)**; Danielle Ricklefs, **Sedgwick County Zoo (KS)**; Marie Moses, **Hutchinson Zoo (KS)**; Erin Martin, **Audubon Zoo (LA)**; Tim Schexnaydre, **Brec's Baton Rouge Zoo (LA)**; Liz Edgington, **Little Rock Zoo (AR)**; Mindy Hack Tapp, **Ellen Trout Zoo (TX)**; Bethany Lorentz, **San Antonio Zoo (TX)**; Mindy Yarborough, **Denver Downtown Aquarium (CO)**; Casey Waggy, **Cheyenne Mountain Zoo (CO)**; Amy Vargas, **Zoo Boise (ID)**; Ellen Vossekuil and Alythea McGee, **Utah's Hogle Zoo (UT)**; Jordan Durant, **Wildlife World Zoo (AZ)**; Mike Price, **Sea World (CA)**; Peter Jones, **San Diego Wild Animal Park (CA)**; Cara Templeton, **Aquarium of the Pacific (CA)**; Jennifer Gale and Megan Hankins, **Coyote Point Museum (CA)**; Chris Angel, **Oakland Zoo (CA)**; Tauna Powell, **High Desert Museum (OR)**; Tammie Allante, **British Columbia Wildlife Park (BC/Canada)**; Susan Eberth, **Toronto Zoo (Ontario/Canada)**.  
*Editor's Note:* Beginning with this March 2008 issue of *AKF*, we will no longer list the names of those Professional Members who do not list their facility on their application.

## New Institutional Members

Binghamton Zoo at Ross Park  
Binghamton, NY  
Michael Janis, Director

Animal Junction, Inc., Churchville, PA  
Joseph Fortunato, President

SeaWorld Aviculture  
Orlando, FL

Tiger Creek Wildlife Refuge  
Tyler, TX  
Brian Werner, Director

Yellowstone Bear World  
Rexburg, ID

## Renewing Institutional Members

Chester Zoo, United Kingdom  
Jane Woodward, Librarian

Philadelphia Zoological Gardens  
Philadelphia, PA  
Vikram H. Dewan, President & CEO


Disney's Animal Kingdom  
Lake Buena Vista, FL  
Kathryn Pring - Animal Program Administration

Lion Country Safari, Loxahatchee, FL  
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# **AAZK Award Nominations Are Now Being Accepted for 2008**

The AAZK Awards Committee is accepting nominations for the **Jean M. Hromadka AAZK Excellence in Animal Care Award**, **The Lutz Ruhe Meritorious Achievement - AAZK Professional of the Year Award**, and **The AAZK Chapter of the Year Award**. Nomination criteria for these three awards are listed below. These awards will be presented at the 2008 AAZK National Conference in Salt Lake City, UT. The deadline for all award nominations is **1 May 2008**. Information concerning the qualifications, nomination procedure, selection procedure and an explanation of the awards may be obtained by contacting Janet McCoy, Chair, AAZK Awards Committee, Oregon Zoo, 4001 S.W. Canyon Rd., Portland, OR 97221; email - mccoymj@metro.dst.or.us

## **Jean M. Hromadka AAZK Excellence in Animal Care Award**

The purpose of this award is to recognize achievement and determination of an individual in the animal care field and in fostering professionalism. Animal care is a science combining zoology, biology, animal management, behavioral observation and daily record keeping on the species in their care. This is essential knowledge for maintaining a species effectively in captivity. The excellent animal care professional must excel in one or more of these areas.

The Jean M. Hromadka Excellence in Animal Care Award is named in memory of her outstanding contributions to the furtherance of AAZK through her work as President of the Association. This award is presented at the annual AAZK National Conference.

### **Qualifications:**

1. The nominee **must** be a full-time animal care professional, employed in any North American zoological institution, aquarium or related facility.
2. The nominee **must** have been employed at least two (2) years on permanent status at the same zoo, aquarium or related facility
3. The nominee **must** be nominated by his or her peers who have also been employed at the same zoo, aquarium or related facility. Management personnel from the same institution may submit supporting nominations.

### **Nomination Procedure:**

1. List name, position, institution's name, address, phone and director, years of service in the field and the recommendation of peers and colleagues.
2. List and document commitment to the profession, outstanding achievements, practical/ outstanding application of knowledge and experience, and keeper skills, etc. The zoo director, curator, or immediate supervisor of the individual being nominated **must sign verification** of these facts.
3. List any extra activities outside of the zoo, aquarium or related facility work: working with conservation groups, youth, wildlife officials, etc.
4. Deadline for nominations is **MAY 1<sup>st</sup>** of each year.

**Selection Procedure:** The Awards Committee, consisting of five keepers, will independently review each nominee.

The winner of the Jean M. Hromadka Excellence in Animal Care Award receives a cash award in the amount of \$500.00, endowed by a generous donation through the Lutz Ruhe Family Educational Trust for the American Association of Zoo Keepers, Inc. The award is endowed by



the Ruhe Trust primarily to aid winners in making travel and registration arrangements to attend the AAZK National Conference in the year of their award, to receive the award and be recognized in person at a gathering of their peers.

## **The Lutz Ruhe Meritorious Achievement - AAZK Professional of the Year Award**

The purpose of this award is to recognize professional members of AAZK, in good standing in the association, for their day-to day professionalism within their facility. This includes participation in AAZK/AZA conservation projects, dedicating time to other facility-related projects or programs (BFR, conservation, wildlife education and individual breeding projects). Commitment and dedication to AAZK at a Committee or Chapter level enhances the nomination. Established in 1982 as a means of recognizing work done above and beyond the criteria of the Excellence in Animal Care Award, it is the only award presented by the Awards Committee for which you have to be a member of AAZK, Inc. in order to qualify. The award is presented at the annual AAZK National Conference.

### **Qualifications:**

1. The nominee **must** be a full-time keeper, professional AAZK member employed in any North American zoo, aquarium, or related facility.
2. The nominee **must** have been employed at least three (3) years on a permanent basis at a zoo, aquarium, or related facility.
3. Peers or colleagues **must** nominate the nominee. Zoo, aquarium or related facility personnel may submit other supporting nominations. The nominators need not be from the same institution.

### **Nomination Procedure:**

1. List name, position, institution's name, address, phone and director, years of service in the field and the recommendation of a peer or colleague.
2. List and document the outstanding achievements: AZA/AAZK Conservation project participation, exhibits, breeding, conservation, etc.
3. The deadline for nominations is **MAY 1st** of each year.

**Selection Procedure:** The Awards Committee, consisting of five keepers, will independently review each nominee.

The winner of the Lutz Ruhe Meritorious Achievement Award - AAZK Professional of the Year Award, receives a cash award in the amount of \$750.00, endowed by a generous donation through the Lutz Ruhe Family Educational Trust for the American Association of Zoo Keepers, Inc. The cash award is endowed by the Ruhe Trust primarily to aid winners in making travel and registration arrangements to attend the AAZK National Conference in the year of their award, to receive the award and be recognized in person at a gathering of their peers.

## **The AAZK Chapter of the Year Award**

The purpose of this award is to recognize AAZK Chapters in good standing with the Association for their dedication and commitment to both the Association and in conveying our conservation and education messages to the public. The award is presented at the annual AAZK National Conference.

### **Qualifications:**

1. The Chapter **must** be a chartered member of the Association, in good standing.
2. The Chapter shall be able to demonstrate by the completion of their re-charter materials, a commitment to conservation and/or wildlife education activities by detailing their involvement and level of commitment to stated activities.
3. Chapters shall be represented by membership roles in which 75% of the Chapter's members are paid members in good standing of the National Association.

### **Nomination Procedure:**

1. Each Chapter that completes and files the required Re-Charter Packet, by the deadline is eligible for this award.

### **Statement**

The eligibility of each Chapter to qualify for this award is enhanced by the Chapter's support of the Association on the national level. Chapters that monetarily support the Association to the best of their ability and that consistently contribute to and support the programs of the Association such as Bowling for Rhinos, or who consistently support exotic animal or habitat conservation programs, both locally and globally shall receive preference.

**Selection Procedure:** The AAZK Chapter of the Year shall be determined by the Board of Directors of the Association and shall be presented during the annual conference of the Association.

**Award Nominations should be submitted to:**

**Janet McCoy, Awards Chair**

**The Oregon Zoo, 4001 SW Canyon Road, Portland, OR 97221**

**Deadline for Nominations is 1 May 2008**

**You may also view AAZK award criteria/nomination procedures  
on the web at [www.aazk.org](http://www.aazk.org)**

**Note:** Nomination information and criteria for the following awards appeared in the February 2008 issue of *Animal Keepers' Forum* - pgs 49-53: *Lifetime Achievement Award (LA)*, *the Lee Houts Enrichment Excellence (LHEE) Award*, *The Certificate of Merit for Zookeeper Education (CMZE)*, *The Certificate of Excellence in Exhibit Renovation (CEER)*, and *the Mazuri Animal Nutrition Award (MANA)*.



## ANIMAL KEEPERS' FORUM

*Special Dedicated Issue on Crisis Management in Zoos*

November/December 2007

*The Journal of the American  
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## Crisis Management in Zoos

Special 136-page issue of *Animal Keepers' Forum* dedicated to Crisis Management in Zoos. This special issue contains papers designed to help animal-care facilities supplement their own crisis management protocols and provide information on how various plans have worked at other facilities.

### Table of Contents

*Acknowledgements* - Susan D. Chan, Managing Editor, *Animal Keepers' Forum* • *Preface* - Ed Hansen, Executive Director, AAZK, Inc. • *Forward* Kris Vehrs, Executive Director, Association of Zoos & Aquariums • *Introduction* - W.K. Baker, Jr., Director, Abilene Zoological Gardens, Abilene, TX • *Crisis Management Planning in Zoological Institutions* - *Geoff Underwood, Stirling, South Australia* • *Disease Risk Communication and Highly Pathogenic Avian Influenza* - *Robyn Barbiers, D.V.M., Lincoln Park Zoo, Chicago, IL* • *Developing a Weapons Team for Dangerous Animal Emergencies: Organization and Training.* - *Norm Piwonka, Departmental Technical Analyst and Ken Kaemmerer, Curator of Mammals, Dallas Zoo, Dallas, TX* • *Who's Afraid of the Big Bad Wolf? Dealing with a long-term, high-profile animal escape* - *Jennifer Barnett, Director of Wildlife Management, Binder Park Zoo, Battle Creek, MI* • *Chemical Restraint of Exotic Animals in an Emergency Situation.* - *Marilynn M. Baeyens, DVM, Veterinarian, Little Rock Zoo, Little Rock, AR* • *The Veterinary Role as First Responders to a Medical Emergency in a Crisis Management Situation.* - *W.K. Baker, Jr., Director, Abilene Zoological Gardens, Abilene, TX* • *Critical Incident Stress Management: A Proven Tool for Addressing Staff Needs After a Traumatic Event* - *Lisa Fitzgerald and Gary Sanchez, Dallas Zoo, Dallas, TX and Jay Pratte, Zoo Atlanta, Atlanta, GA* • *Developing a Program for Dangerous Animal Emergencies: Procedures for Animal Escape, Unauthorized Person in with Dangerous Animals, and Unified Command System* - *Ken Kaemmerer, Curator of Mammals, and Norm Piwonka, Departmental Technical Analyst, Dallas Zoo, Dallas, TX* • *Dive Safety in Zoos and Aquariums* - *Gil Falcone, Senior Dive Safety Officer, Monterey Bay Aquarium, Monterey, CA* • *Wildfire! One Facility's Response and Lessons Learned* - *Chuck Brinkman IV, Professor, Moorpark College, the Staff of America's Teaching Zoo and the Students from the Classes of 2004 and 2005* • *Keep Communication Equipment Powered in an Emergency, Part 1 What to Put in Your Emergency Power Kit* - *Thomas Shaddack, TechSoup.com* • *Keep Communication Equipment Powered in an Emergency, Part 2 How to Convert Your Devices to Run Off Batteries* - *Thomas Shaddack, TechSoup.com* • *The Terrorist Threat to Zoological Institutions* - *W.K. Baker, Jr., Director, Abilene Zoological Gardens, Abilene, TX and Commander W.S. Graves, U.S. Navy, Retired* • *Hurricane Preparedness: Lessons Learned from Hurricane Katrina* - *Elizabeth E. Hammond, DVM, Lion Country Safari, Loxahatchee, FL and Daniel K. Maloney, General Curator/Life Sciences, Zoos Victoria, Parkville, VIC, Australia* • *Training Dangerous Animals Safely is No Accident* - *Gary M. Priest, Curator-Applied Animal Behavior, San Diego Zoo/San Diego Wild Animal Park/Zoological Society of San Diego, San Diego, CA* • *Firearms Use and Training in AZA Institutions* - *Dan Beetem, Director of Animal Management, The Wilds, Cumberland, OH* • *Aspects of a Safety Program for Zoos and Aquarium Facilities in the United States* - *Ed Hansen, Risk Management Coordinator, City of Tucson, Tucson, AZ*

# Crisis Management in Zoos Order Form

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I wish to order \_\_\_\_\_ copy (ies) of the Crisis Management in Zoos dedicated issue of *Animal Keepers' Forum*.

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*Price includes Domestic media rate postage and Canadian airmail postage.*

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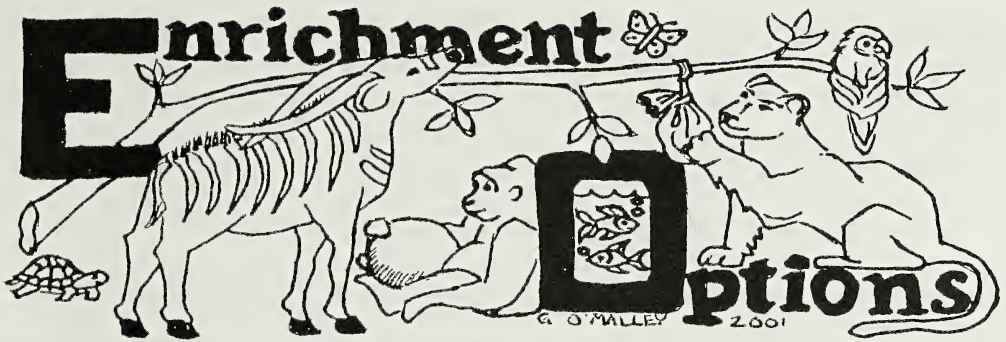
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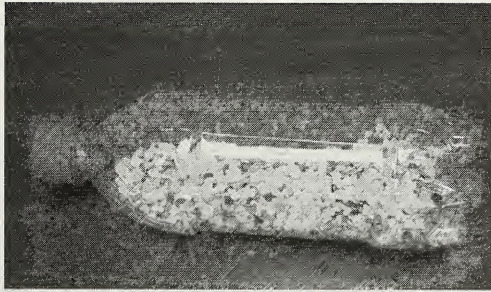


EO Editor - Rachel Daneault, Disney's Animal Kingdom

## The Confetti Bottle - A Novel Enrichment

By Heather Neldner-Zookeeper- Aviary  
Milwaukee County Zoo, Milwaukee Wisconsin

Are you looking for a fun, easy to make, easy to use and inexpensive toy? Try a confetti bottle. This toy is enjoyed by many species at the Milwaukee County Zoo, including Humboldt penguins (*Spheniscus humboldti*); common grey-winged trumpeters (*Psophia crepitans*), plush crested jays (*Cyanocorax chrysops*), wattled curassows (*Crax globulosa*), green aracari (*Pteroglossus viridis*), red billed hornbills (*Tockus erythrorhynchus*) and many more. It may also be suitable for some mammal species. The confetti bottle is visually stimulating and it makes interesting noises when it is shaken or rolled . It is fun on land and in the water.



**Confetti Bottle**

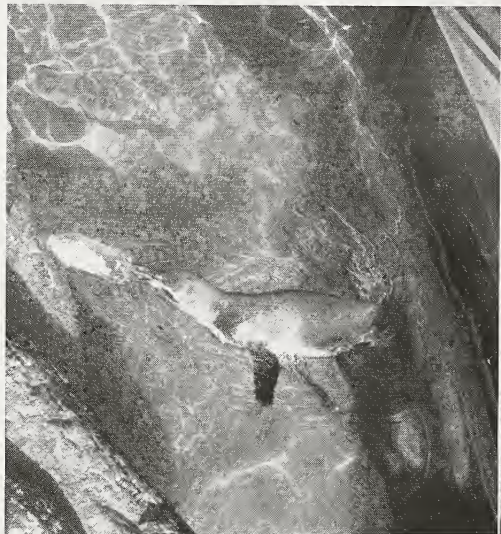
Things you will need:

- Clear plastic bottle-20 oz soda bottles work really well. If you have a more destructive species you may want to use a thicker plastic juice bottle, Tropicana Twister bottles work well. For smaller species, 8 oz juice bottles work nicely.
- Confetti-store bought or you can make your own with colored paper and a hole punch. We like to use shiny confetti of many different shapes, sizes and colors.
- Funnel
- Super glue

What to do:

- Wash and dry the bottle
- Remove the label
- Put about 2 inches of confetti inside the bottle, a funnel works nicely for this
- Super glue the cap on the bottle and allow it to dry for 24 hours. Use a lot of glue so the cap stays on no matter what
- After 24 hours, scrape off any excess glue and rinse off the cap to remove any glue debris
- Give to the animal to enjoy

This toy is given with supervision, especially with the more destructive species until we are sure the animal interacts with the toy appropriately. We also inspect the toy frequently and replace it as needed. The toy could cause problems if the animals puncture the bottle and ingest the material inside.



At left is Humboldt penguin "Houdini" playing with a confetti bottle in his pool.

At right is a wattled curassow playing with a confetti bottle in its exhibit.



*All photos by the author*



A variation on this toy is to make a glitter bottle. You will need the same materials listed above but instead of confetti you will need glitter and you will also need water. Assemble the item as above and fill with water. Glue the cap on tightly and let dry for 24 hrs. This toy is similar to a snow globe when it is shaken up. We use them with our penguins. We will shake the bottle up and it is visually stimulating for the birds. This toy is always used with supervision and is removed from the exhibit when we are not able to supervise the animal with it.

*(Ideas appearing in this column have not necessarily been tested by the editors for safety considerations. Always think ahead and use good judgement when trying new ideas. You are invited to submit material for the Enrichment Options Column. Look in the January 2004 issue of AKF for guidelines for articles acceptable for this column's format or contact the editor at [akfeditor@zk.kscoxmail.com](mailto:akfeditor@zk.kscoxmail.com) for a copy of the guidelines. Drawings and photos of enrichment are encouraged. Send to: AKF/Enrichment, 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054, USA. Eds.)*

## Safari to Kenya

Interested in visiting Lewa Wildlife Conservancy in Kenya with a zoo group? We have a few spots open on our Feb. 13-28, 2009 trip. We are accepting zoo staff, volunteers and their travel companions. Please visit: <http://www.lewa.org> or <http://www.lewasafaricamp.com>.

Total cost will be about **\$4,000 per person** depending on the cost of the flight at the time we book. This includes round trip (RT) airfare to Nairobi, RT flights directly into Lewa, transfer fees, 8 nights at the Lewa safari camp (luxury camping including showers/bathrooms within each tent), 2 nights at IL Ngwesi or Taissia (excellent community lodge which has won many tourist awards), \$60 daily conservancy fee, all meals, and game drives. Tips (about \$60/person for entire stay) and alcohol are not included. The regular price is \$6,000 per person, but Lewa gives AAZK better rates because of our support thru Bowling for Rhinos.

Rates are based on double occupancy (but we can work on pairing you up if you don't want to pay extra as a single). They also have triples. Maximum number is 14 for the trip/leader.

Patty Pearthree and Denise Wagner will be Co-Leading this trip to Lewa. An optional extension to the Maisai Mara is available as space allows.

These trips fill quickly so call 919-678-0449 or email Patty at [ppear3@pear3.org](mailto:ppear3@pear3.org) ASAP if interested.

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# ***National Elephant Center Formed***

For many years, curators, keepers, veterinarians and others associated with elephants at Association of Zoos & Aquariums (AZA) institutions wanted a facility to provide short- and long-term solutions to help manage the nation's nearly 290 elephants that live at 77 different AZA-accredited facilities. In 2004 the idea of creating a national elephant center came as the result of an Association of Zoos and Aquariums Elephant Management Strategic Planning Meeting involving thought leaders and members of the Elephant Taxon Advisory Group/Species Survival Plan (TAG/SSP®). Shortly thereafter, dozens of AZA-accredited zoos donated critical funding support to explore options for establishing a Center, which will be an important tool in elephant management and conservation. An extensive search was launched to research potential sites to locate The Center. Ultimately, a team of elephant experts selected property offered by Waste Management near Okeechobee in central Florida.

In the coming year The National Elephant Center will break ground, build an infrastructure to aid in the care of the elephants staying there, and begin fulfilling its mission to make an impact on the conservation of elephants around the world. Facilities for the Center, including barns for the elephants, are under development.



The project is being built with the support of numerous public and private donations, including corporations, individuals and AZA-accredited zoos. The Center's board is in the process of hiring technical staff to get the Center fully operational with elephants onsite in 2009.

## **Conservation & Research**

Elephants are under a barrage of threats – from poaching to habitat loss, human conflict and climate change. Every year nearly 4,000 elephants are killed to sustain the illegal trade of ivory. In order to understand the best way to protect elephants in today's world, additional support for research, education and conservation programs is needed to ensure their future.

The National Elephant Center is poised to become a leader in this effort through research, advocacy, education and conservation:

- **Research** - Wild populations of elephants are increasingly becoming managed due to shrinking habitat, changing population dynamics and encroachment by human development. Population management research at The National Elephant Center will provide conservationists with tools and techniques for managing these populations in the wild.
- **Advocacy** – The Center envisions becoming a voice for elephants nationally and internationally through advocacy and collaboration that will speak up for elephants on issues that affect their continued survival.
- **Education** – Though not open to the public, The National Elephant Center will educate school children locally and support formal education programs at accredited zoos throughout the country, which teach millions of visitors each year about elephants and their status in the wild.
- **Conservation** – The Center will provide an important space for research that will help zoos aid the Asian and African elephant populations in the wild. North American zoos already help support more than 85 research projects in zoos and in the wild to learn more about elephants.

As a permanent, high-quality facility, The National Elephant Center will take a leadership role in providing: 1) Population management support for AZA-accredited zoos, including short- and long-term holding for bull elephants; residency for elephants when their home facilities are being renovated; and residency when herd dynamics change (births, deaths), to test compatibility and new social groupings; 2) Centralized training facility and programs for keepers, veterinarians and others to answer an increasing need for a practical, hands-on training in the latest developments in management, nutrition, preventative health care, enrichment, training and research, as well as expertise and facilities for artificial insemination (AI) and breeding; 3) Elephant research opportunities, including areas of reproduction, memory, communication, visual acuity, nutritional requirements, pathology of disease and its treatment to aid Asian and African elephant populations; 4) Support to advance elephant conservation programs by serving as a resource for elephant experts and facilitating collaborations



among the AZA Elephant Taxon Advisory Group/Species Survival Plan, field scientists and researchers, government organizations, and NGOs, such as the International Elephant Foundation; and 5) Supporting public education of elephants. Studies show that accredited zoo education programs and opportunities for people to see elephants up close and inspire wildlife conservation awareness and action. The Center will become an elephant resource and learning center and develop programs that can help reach the public with important education messages about elephants. Elephants in the care of accredited zoos provide an opportunity to help increase knowledge, change attitudes, make emotional connections and change behaviors in visitors that can positively improve elephant conservation.

The Center is located on about 300 acres owned by Waste Management in Okeechobee, Fla. It includes open space for elephants to roam and explore while providing a variety of natural waterholes for wallowing. It is adjacent to property that Waste Management maintains as a natural area certified by the Wildlife Habitat Council that provides food and nesting areas for threatened Florida sandhill cranes and other species. To learn more about the National Elephant Center visit their website at [www.thenationalelephantcenter.org](http://www.thenationalelephantcenter.org) where you may view site maps and read more about the proposed plans and mission of this unique facility. (Source: The National Elephant Center website Feb. 7, 2008)

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### **REMINDER: Third Call For Papers & Posters**

**Deadline for abstracts:** 1 May 2008

**Deadline for papers:** 15 July 2008

Our guiding theme for the 2008 conference, “*Elevating Animal Care*”, will focus on concepts that highlight **professionalism, creativity and initiative** in the realm of conservation, education and animal husbandry. Animal care professionals from all related fields are encouraged to submit high quality, original topics for consideration. Abstracts will be accepted for three presentation types:



- **Papers** - Standard papers typically represent a summary of innovative techniques, achievements or approaches to animal care, welfare, conservation, education or research. Authors will be expected to give a 15-minute presentation on the relevance and practical application of their topic.
- **Posters** - Accepted posters will be displayed during the conference, therefore the topic should be suitable for visual presentation. Authors will discuss their work with conference delegates during the designated poster presentation session.
- **Workshops** - Workshops allow practical presentation and discussion of concepts relevant to animal care professionals. Workshop organizers should outline a list of group leaders, a summary of the theme & significance, format of discussion, expected number of participants and length of workshop.

Abstracts should be no longer than 300 words and should include in detail the significance of the topic being presented along with results, conclusions and benefits of the work described. Poorly written abstracts, those that do not contain proper information or do not otherwise meet submission criteria will not be considered.

All abstracts should include the following information:

- |  |   |
|--|---|
| • Full name of presenter & co-authors          | • Institution/Affiliation                   |
| • Position or title                            | • Title (specify paper, poster or workshop) |
| • Short bio of yourself for introduction       | • A/V needs                                 |
| • Contact information, including email address |   |

Submit abstract by **1 May 2008** in Microsoft Word via email to [utahaazk@hoglezoo.org](mailto:utahaazk@hoglezoo.org). Authors will receive an email confirmation upon receipt of their abstract. Authors will then be notified regarding acceptance by 1 June 2008. All final and complete papers must be received by 15 July 2008 in order to be included in the program.

For more information, please visit our website [www.utahaazk.org](http://www.utahaazk.org)

You can also contact us at: Utah Chapter AAZK 2600 Sunnyside Avenue Salt Lake City, UT. 84108  
(801) 584-1784 Email: [utahaazk@hoglezoo.org](mailto:utahaazk@hoglezoo.org)

# **Hand-Rearing a Giraffe**

## *(Giraffa camelopardalis reticulata)*

### **at Miami MetroZoo**

*By Terry D. Webb, Curator of Mammals  
Miami MetroZoo, Miami, FL*

#### **Introduction**

Maternal neglect of giraffe calves has been documented in the wild and in captivity. The most commonly believed reason is that the calves do not stand and attempt to suckle in a quick manner. The mother's maternal instincts are released by the calf's successful efforts to help itself to the udder and the strongest survive. Some giraffe calves have been observed to nurse within the first ten minutes of life (Dagg and Foster, 1976).

Hand rearing is not recommended as an elective process and especially not for male giraffes (Giraffe Husbandry Resource Manual, AZA and Giraffe Taxon Advisory Group, 2004). In almost all cases, the philosophy of zoo managers is for the offspring of captive born species to be parent-reared. At times this goal cannot be obtained for various reasons. When an animal needs to be hand-reared it is very important to have a clear plan of action for intervention by staff. The dietary, medical, and social needs of the species all should be included in the hand-rearing protocols.

On 12 August 2005 a male giraffe was born to a multiparous female at Miami MetroZoo. This calf was normal in appearance and was immediately rejected. This female had rejected her previous two calves. The first calf had a hoof deformity and was euthanized. The second calf was normal in appearance and was immediately rejected with violent behavior from the dam. It was pulled and sent to another institution for hand-rearing, but did not survive.

#### **Hand-rearing Process and Protocols**

Once maternal rejection of this male calf was confirmed (four hours of aggressive behavior from the dam), the keeper staff, managers and veterinary staff met and decided to attempt to hand rear this individual.

**Day 1** - Late in the afternoon a bottle was offered and calf refused to suckle. Staff next hand restrained the calf, a blood sample was obtained, umbilicus was cleaned with Betadine® (chemical disinfectant), injections of vitamin E and antibiotics were given, and a weight obtained. The calf was then tube fed one liter of Carnation® milk mixed with freeze-dried commercial bovine colostrum.

**Day 2** – Staff continued to try different nipple types and offered a bottle hourly without any success. The calf was given SQ electrolytes and dextrose in the afternoon.

**Day 3** – Staff continued to attempt to bottle feed without success. At 1430hrs the calf was tube fed with 500 ml of electrolytes and at 1730hrs the calf was tube fed with one liter of electrolytes and a blood sample taken.

**Day 4** – Calf restrained and a commercial “small-calf nipple was forced into the calf’s mouth. Calf suckled for the first time at 1100hrs and consumed five liters of Carnation® milk. At 1300hrs calf took nipple on its own and consumed 800 ml. 1730hrs – 900 ml. 2100hrs – 900 ml. Found small amount of defecation overnight for the first time and urinated four times after stimulation at each feeding.



**Day 5** – Calf continues to take bottle well. Calf urinating and defecating without stimulation. Body temperature = 100.4°F (38°C). Feeding schedule established to be 1000ml at each feeding for five feedings per day.

**Days 6-10** – Calf continues to take bottles well. Day 10 body temperature = 100.9°F (38.27°C)

**Day 11** – Body Temperature = 100.3°F (37.94°C) Eating 100%.

**Days 12-16** – Eating 100%.

**Day 17** – Formula increased to 1200 ml per feeding for five feedings per day.

**Day 19** – Neonatal exam done, blood draw, tetanus, clostridium, and leptospirosis vaccines given.

**Day 21** – Began housing and socializing calf to adult female and juvenile female. No problems observed and calf separated for the evening.

**Day 35** – Calf lethargic, ears down, reduced appetite at multiple feedings. Started Rx Pepcid AC, 10mg, PO in formula at each feeding UFN.

**Day 36** – Pepcid®AC reduced to three feedings per day. BT = 99.5°F (37.5°C). Fecal sample negative for pathogens. Rx single dose, Sulfamethoxazole-Trimethoprim (TMPS), 1920mg, PO.

**Day 37** – Diet amount reduced to 800ml per feeding for five feedings daily. BT = 100.6°F (38.1°C) Urine sample submitted and all values within normal limits.

**Day 38** – Rx Panacur®, 15ml (de-wormer), single dose, PO, in formula.

**Day 39** – Manual restraint, x-rays taken of chest, ultrasound of umbilicus, and blood sample taken, and no abnormalities observed.

**Day 40** – Rx change, Pepcid®AC stopped and Gastroguard®, 0.7ml, PO, SID, UFN.

**Day 42** – Diet increased to 1000ml per feeding. Refused all feedings throughout the day, blood sample taken for culture, given injection of Naxcel® (antibiotic) and Eqstim® (immune booster).

**Day 43** – Rx Naxcel® injection IM, SID, for three days due to poor weight gain and appetite and no confirmed illness..

**Day 46** – Eating well, no defecation seen in three days, urinating well. Rx Eqstim® 1X weekly UFN and Naxcel® injection SID, UFN.

**Day 47** – Immobilized for standing sedation. BT = 99.4°F (37.4°C). Blood sample taken and injections given of Naxcel® and Banamine®. Aspirated raised area filled with brown fluid on back and submitted sample for culture. Seramune® (equid immune booster) was administered IV via (1) liter of LRS. Gastroguard® stopped.

**Day 49** – Formula increased to 1200 ml per feeding.

**Day 51** – Naxcel® stopped and Rx Sulfatrim® 2.5 tabs, PO, BID, UFN.

**Day 54** – Eqstim® injection.

**Day 57** – Formula increased to 1400ml per feeding for five feedings.

**Day 60** – Eqstim® injection and Sulfatrim® increased to three tabs, PO, BID.

**Day 84** – Changed from five to four feedings per day.

**Day 89** – Observed eating hay and grain.

**Day 120** – Changed from four to three feedings per day and increased to 1600ml per feeding.

**Day 151** – Changed from three to two feedings per day.

**Day 180** – One feeding per day.

**Day 231** – weaned.

### **Data for Progress of Growth**

Birth weight – 47.27 kg (104.0 pounds).

Weaning weight – 140.91 kg (310.0 pounds).

Total weight gain from birth to weaning – 93.64 kg (206.0 pounds).

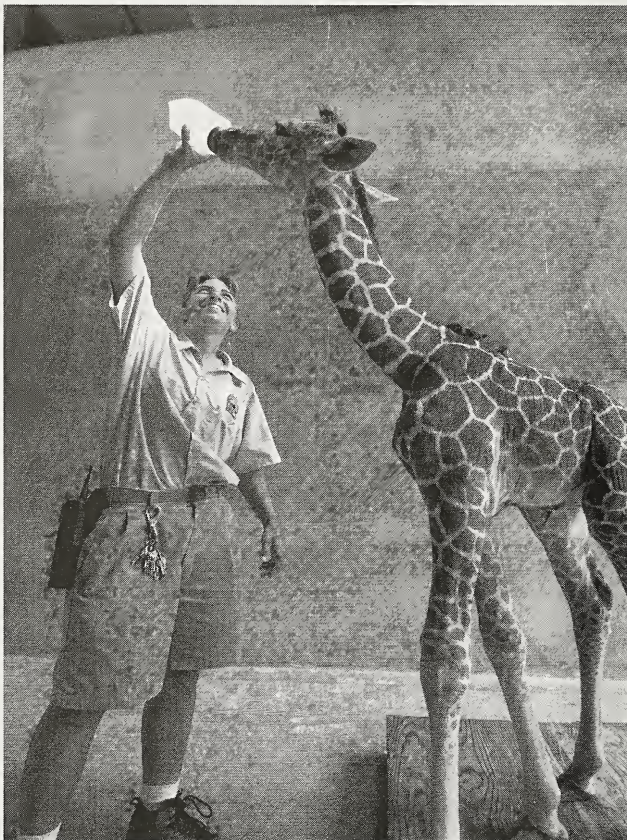
Weight at one year of age – 219.1 kg (482.0 pounds).

Total weight gain from birth to one year of age – 171.82 kg (378.0 pounds).

Average weight gain per month from birth to one year of age – 14.91 kg (32.8 pounds).

### **Socialization**

The socialization process for this calf began at Day 1. This calf was given a chance to nurse from its mother. The decision to hand-rear this calf included that the location for the process be in the giraffe barn where the herd and the calf could, smell, hear, touch and see each other through chain link fencing. At Day 22 the decision was made to house the calf with a 29-year-old experienced female and her six-month old calf during the day when keepers were present to observe the group. No aggression was observed and this management style was used for the remainder of the hand-rearing process without any problems. The calf was separated out for bottle feedings and housed alone at night. This social grouping is believed to have been beneficial for this animal's species specific behavioral interactions and for his future integration to another herd at another facility.



Senior Keeper Amy Neill feeding giraffe calf on scale platform.

*(Photo by Ron McGill)*



## Conclusions

Hand-rearing is a difficult, challenging, and labor intensive, especially during the early portion of the process. With this giraffe, the most difficult and challenging aspect for the staff and the animal was nipple acceptance and the recognition that it was the location for nursing. A chute or restraint area may have been helpful during the early part of this project. After the calf recognized and accepted the nipple, and a few medical hurdles were cleared, the hand rearing of this individual was very successful.

## Acknowledgements

Amy Neill, the senior keeper of this area, was instrumental in getting this project to be successful. Her dedication and husbandry skills were very valuable. The primary keeper in the area, Nick Pottratz, also did a great job. Dr. Christine Miller provided great guidance and patience with dietary needs and medical issues. Everyone deserves thanks and appreciation for their efforts.

## Bibliography

Burgess, A. (Ed.) 2004. The Giraffe Husbandry Resource Manual,  
The Association of Zoos and Aquariums Antelope Giraffe Taxon Advisory Group.

Dagg, A. I., and Foster, J. B. 1976 The Giraffe Its Biology, Behavior, and Ecology.  
Krieger Publishing Company, Malabar, Florida.

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## ATTENTION PHOTOGRAPHERS !!



We would like to begin putting together a library of photographs to be utilized in *Animal Keepers' Forum* either as an occasional four-color cover or in conjunction with material inside the journal. We plan to gather this photo library electronically in jpg or tif formats. Past President Denise Wagner will be gathering and organizing this photo archive and photographers interested in submitting photos should send them to her at [denise.wagner@aazk.org](mailto:denise.wagner@aazk.org). Photos should be high resolution and in either jpg or tif format. When sending, please include common and scientific name of species featured in photo. Each photo must be accompanied by a Photo Release Form that is available on the AAZK website.

You may submit the form electronically to Denise or print it out, obtain required signatures and send by regular mail to Susan Chan, AAZK, Inc., 3601 SW 29<sup>th</sup> St., Suite 133, Topeka, KS 66614-2054 Attn: photo release.

AAZK, Inc. does not pay for photographs, but will give appropriate photo credit to individual photographers and/or institutions whenever a photo is utilized and a copy of the *AKF* issue in which the photograph appears will be sent to the photographer.

## *Are You Moving?*

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**[aazkoffice@zk.scoxml.com](mailto:aazkoffice@zk.scoxml.com) Please put "Address Change" in the subject line. You may also send in a change of address from the AAZK website ([www.aazk.org](http://www.aazk.org))**

# The Animal Training Committee Presents



**Where you can share your training experiences!**

*Training Tales Editors – Jay Pratte, Zoo Atlanta;  
Kim Kezer, Zoo New England; and Angela Binney, Disney's Animal Kingdom*

## **Injection Training 1.1 North American River Otters Using a PVC Chute**

*By Paige Morabito and Megan Dunn  
The Maryland Zoo in Baltimore, Baltimore, MD*

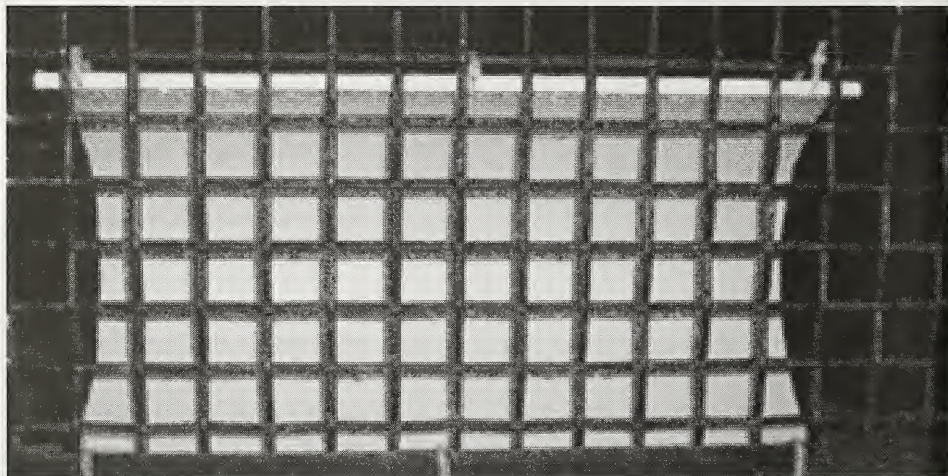
### **Training Goal**

To use positive reinforcement techniques to train 1.1 North American river otters (*Lontra canadensis*) to enter a PVC chute, target, hold and accept vaccine or anesthetic injections.

### **Materials Needed**

- 2 ft. PVC pipe (10 inches in diameter)
- a drill
- a saw
- 6 zip ties

Cut the PVC pipe down the middle lengthwise and drill three equidistant holes 1/2 inch from the cut edge of the PVC. Thread the zip ties through each hole to attach the PVC to the mesh. The end result is half of a PVC pipe that functions as a chute.



**The PVC Pipe** (Photo credit Megan Dunn)



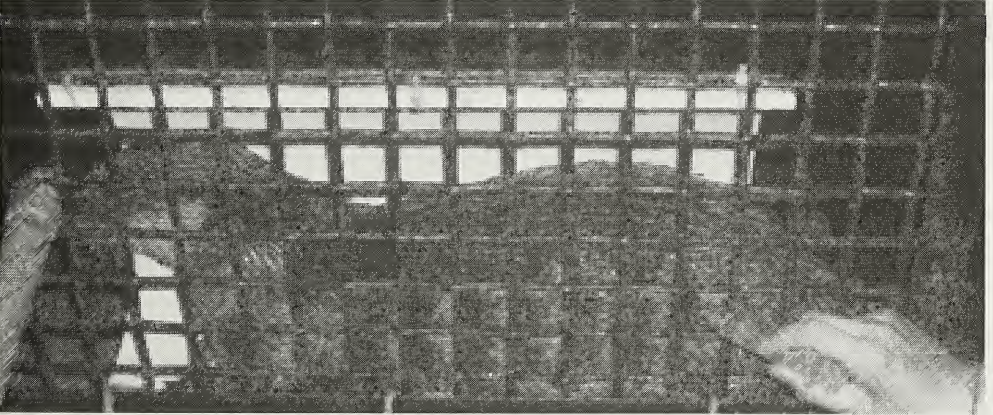
### **Training History**

Mary, a six-year-old North American river otter had been trained to voluntarily enter a squeeze cage to receive anesthetic injections for physical examinations. In order to minimize the stress of this process and vaccinate her without anesthesia, keepers began training her to accept voluntary injections. The challenge was keeping her body in the correct position with her thigh muscle flush against the mesh of her enclosure to receive the injection. The solution was the development of the PVC injection chute.

An 11-year-old North American river otter, Elvis, came to The Maryland Zoo in Baltimore two years ago with no training history. Over the last two years, he has been trained to perform a number of behaviors; however he had not previously been trained to “hold” or maintain a particular position for an extended period of time. Since he is less experienced, the keepers started the injection training process with Mary before moving on to Elvis.

### **Training Process**

The otters were immediately attracted to the PVC chute and entered it as though it was a toy. Keepers were then able to use this as a mechanism to train the otters in other ways. The otters were targeted to the end of the chute. The curvature of the PVC naturally positioned the otters’ hind quarters flush with the mesh of the enclosure which allowed perfect muscle placement for training with a syringe. Once the otters felt comfortable targeting, they were trained to hold for small increments up to twenty seconds. During these hold increments, the otters were brushed by a syringe with a paperclip on the end by a second trainer or a member of the veterinary staff. When comfortable with the brushing sensation, pressure was applied to the syringe and hold increments were increased. Both otters reached this stage, though Mary did so faster because she had previously been trained to hold. After meeting the goal of holding the position for twenty seconds, a syringe with a needle would next be introduced.



**Mary in tube receiving injection** (Photo credit Megan Dunn)

### **Conclusion**

Mary was due for her distemper vaccine just prior to the trainers’ introduction of the needle. In order to avoid an anesthetic procedure during otter breeding season it was decided to try to give her the vaccine before training with the needle. Mary’s previous training with the paperclip had prepared her for the vaccination, and we were able have our veterinarian successfully administer the vaccine through voluntary injection. Elvis recently received his distemper injection voluntarily as a result of his training as well.

### **Acknowledgements**

We would like to thank Rebecca Gullott, Mammal Collection and Conservation Manager, for her support of our training efforts. We would also like to thank Dr. Carol Bradford, Colleen Baird, Area

Supervisor and Assistant Elephant Manager, Chris Grassl, Area Supervisor and Julie Grove, Animal Behavior and Training Coordinator, for all of their help and support during the training process. [paige.morabito@marylandzoo.org]

### **ATC Comments:**

*In previous ATC articles, we published a short series titled "Tools of the Trade" that addressed evaluating different aspects of your workplace, and using creative applications in order to help reach training goals. Here, the author has taken materials generally readily available to zoo staff (PVC), and modified it in a simple, inexpensive way to adjust the environment. Since many facilities work otters in protected contact, positioning can be difficult. The author found a means of modifying the otters' enclosure to guide the animals into the position required to complete the injection training. Creative and safe use of environmental Tools aided in accomplishing a training goal, demonstrating that creativity and looking at the work area in a different light can lead to success.*

*On a separate note, the undertone of the article clearly details a positive working relationship with other keeper and veterinary staff, which is integral for training a difficult medical procedure in a captive environment. Positive communication and relationships between trainers and staff win the day!*

*You are invited to submit material for the Training Tales Column. Look in the November 2006 issue of AKF for guidelines for entries acceptable for this column's format. Drawings or photos of training are encouraged. Contact Jay Pratte at [jpratte@zooatlanta.org](mailto:jpratte@zooatlanta.org) for more details or to submit an entry.*

## **The Animal Training Committee Presents**



*Where you can share your  
training experiences!*

Just a reminder, submit your "Training Tales" and experiences in operant conditioning to share with *Animal Keepers' Forum* readers. This opportunity provides a convenient outlet for you to exhibit your training challenges, methods and milestones with the AAZK member network. See a more detailed description of the Training Tales concept in the August 2006 AKF on page 331. Please submit entries based on the following guidelines:

- a) *Submit a brief description of a training project at your zoo (500 words or less, in text or bullet points). Details should include the following:*
  - *Define the training goal*
  - *List important steps*
  - *Timeline used*
  - *Tips you learned along the way*
- b) *Include 1-2 digital photos (jpg or tif) that clearly depict the animal in the learning process or performing the desired goal (list source and photographer of each image).*

*Please send entries or questions to: Jay Pratte at [jpratte@zooatlanta.org](mailto:jpratte@zooatlanta.org) (use Training Tales Entry as the subject line). Happy training!*



# Evaluating Enrichment: A Pilot Study with Broad Applications

*By Diana J. Raper, Research and Conservation Intern, Palm Beach Zoo,  
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*Stephanie Dampier, Assistant Curator of Primates and Behavioral Research  
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**Abstract:** Environmental enrichment is a term used to describe the practice of providing captive animals with stimuli that encourages mental stimulation, induces natural behaviors, and increases physical activity within the context of the animals' natural history. Although, providing environmental enrichment for captive animals is standard at zoological institutions across the United States, the effectiveness of environmental enrichment often goes unevaluated. Without evaluating animal-enrichment interactions the success or failure of the enrichment process cannot be determined. Therefore, developing strategies to assess the effectiveness of environmental enrichment is paramount to meeting the physical and psychological needs of captive animals.

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## Introduction

Enrichment is often grouped into five categories, food-based; sensory-based, social interaction, novel objects, and training. For example, enrichment may include sprinkling spices such as cinnamon or basil on the props in an exhibit to encourage scent-marking behavior or providing boxes with treats inside to mentally and physically stimulate to animals to search for food. Animal training for educational presentation or to improve husbandry practices also provides enriching experiences for captive wildlife. In 1999 the Behavioral Advisory Group (BAG) organized a working group to develop the basic framework for encouraging formal enrichment programs in AZA member institutions (Shepherdson, 2002) that have been incorporated into the AZA accreditation requirements. The American Zoo and Aquarium Association (AZA) defines enrichment as:

“a process for improving or enhancing animal environments and care within the context of their inhabitants' behavioral biology and natural history. It is a dynamic process in which changes to structures and husbandry practices are made with the goal of increasing behavioral choices available to animals and drawing out their species-appropriate behaviors and abilities, thus enhancing animal welfare” (AZA/BAG, 1999).

Ideally, an enrichment program should be designed for every animal in a zoological collection and these programs should focus on the animal's physical and psychological needs as well as the natural history of the species. However, many institutions may not have the manpower to create individual animal enrichment programs and may assign broad categories for enrichment (e.g. feline enrichment, primate enrichment, hoofstock enrichment). Regardless of whether the enrichment program is broken down by individual, species, or some other designated category, there are essential elements that are fundamental to creating and maintaining an effective enrichment program.

The framework developed by the BAG includes goal setting, planning and development, implementation, evaluation and refinement, as well as recording keeping. The goal setting in an enrichment program may include all the benefits detailed in the above definition of enrichment provided by AZA/BAG (1999). Additional goals may include increased animal visibility by the public and subsequent improved public relations due to enhanced quality of care for the animals. The planning and development of new enrichment items or training methods is often a time-consuming process, sometimes physically and mentally challenging for all staff involved, and occasionally cost prohibitive. However, once new enrichment items/methods have been adopted into the enrichment program, the time and financial investment for continued use of the enrichment item is

often greatly reduced. Despite the often cumbersome process of enrichment planning and development, implementing enrichment techniques is often a rewarding experience for the keeper. More importantly, is the enrichment process rewarding for the animals receiving the enrichment? Without evaluating and refining the enrichment process, the success of individual enrichment items and the enrichment program as a whole is unknown.

Evaluating the effectiveness of an enrichment program and subsequent refinement requires open communication and commitment from all staff involved (e.g., zoo veterinarian, animal managers, keepers, research staff/interns), although the level of involvement will vary by institution. Although initiating a full-scale study into the effectiveness of individual enrichment items may be ideal, this is a time and labor-intensive process. Alternatively, pilot or feasibility studies should be considered because these small-scale experiments can provide preliminary information that can illuminate the strengths and weaknesses of an enrichment program without an extensive research endeavor. Additionally, pilot studies provide an opportunity to test logistics before committing to a full-scale research project. Furthermore, pilot studies provide preliminary data that can be used by the involved staff to define key terms, develop research objectives, and generate hypotheses. For example, the black bear (*Ursus Americanus*) enrichment program pilot study was an effective tool in gathering information regarding the effectiveness of the bear enrichment program at the Palm Beach Zoo.

## Methods

Although enrichment is often grouped into five categories, food-based, sensory-based, social interaction, novel objects, and training, the focus of this study was an investigation into animal-enrichment interactions using approved food and sensory-based keeper-provided enrichment items only. Food-based enrichment was defined as any portion of the animals' diet or treats. Sensory-based enrichment items were defined as any item that enabled the animal to use one or more of the five senses to examine or manipulate an object or investigate any area of the exhibit. Sensory-based enrichment items included spices on props and lowering the water level of the pool in the exhibit. Although spices may be consumed when the animal is licking a surface or substrate where scents have been applied, these items were designated as sensory-based for the purpose of this pilot study.

Prior to formal data collection, the two adult American black bears were observed for 15-30 minutes at random times during park hours for a total of approximately three hours. Initial observations provided an opportunity to determine what categories would be best suited for a pilot study investigating the amount of time the bears spent interacting with enrichment items. During this time, multiple data collection techniques were tested in order to determine what technique would be best suited for documenting animal-enrichment interaction. As data were being collected on two bears in the same enclosure during each observation session, scan sampling at two-minute intervals was determined to be the best method for data collection.

Scan data were collected individually for the bears at two-minute intervals during 30-minute observation sessions, four times a day, and two days a week during the three-week pilot study period. Observations were conducted in the morning, at mid-day, and in the afternoon. A simple ethogram and data sheet with three categories were used to document whether the bears were or were not interacting with keeper-provided enrichment item(s) or if they were inactive. The animals were considered to be interacting with the enrichment item if the bears were actively contacting the enrichment item or visibly responding to the enrichment item (e.g., scent-marking a new prop, pawing a Boomer Ball<sup>®</sup>, flehmen response to perfume in the exhibit, foraging for food in the grass). The bears were considered active but not interacting with the enrichment items if they were physically active but not contacting or reacting to the enrichment item (e.g., wrestling with one another, allogrooming, self-grooming, pacing). The bears were designated inactive when they were stationary for more than 10 seconds and not engaging other individuals or the environment, or asleep. Notes were also taken if either bear demonstrated behaviors that appeared to be aberrant (e.g., pacing, excessive grooming, pulling plants through the fence, and charging the fence toward heterospecifics).



in the neighboring exhibit). Typical behaviors such as wrestling and soaking in the pool were also documented.

All scan data were converted from standard observational data points into percentages of time spent in each category. Data were then displayed in a simple bar graph that provided a graphical representation of the time the individual bear spent in each category during the total observation period. Although there were many different ways to display these data, the goal of this study was to gather preliminary data and generate objectives that can be used to enhance experimental design and analysis of future enrichment evaluation studies.

An essential component of this study was carnivore staff participation. The carnivore manager created an enrichment log specifically for this study that detailed what enrichment would be provided to the bears and where the enrichment was placed in the exhibit (Table 1). This information was essential for determining whether or not the bears were interacting with the keeper-provided environmental enrichment items.

**Table 1.** Enrichment log for the items provided and where they were placed in the bear exhibit.

Observation Session – Date	Enrichment Type	Enrichment Item(s)
Session 1 October 16, 2007	Sensory / Food	Corn Scattered Onion powder on logs
Session 2 October 17, 2007	Food	Produce on logs Spices on logs
Session 3 October 23, 2007	Food / Sensory	Lowered pool level Honey on logs
Session 4 October 24, 2007	Food	Corn scattered Sunflower seeds scattered
Session 5 October 30, 2007	Sensory / Food	Cinnamon on logs Sunflower seeds scattered
Session 6 October 31, 2007	Food	Pear baby food Peanuts scattered

**Results:**

The individual results for each bear varied slightly from one another (Fig. 1& 2). However, during the two-hour observation sessions conducted over the six-day study period both bears spent the least amount of time interacting with the keeper-provided enrichment items.

**Discussion**

This short study provided a wealth of information regarding how much time the bears spent interacting with their provided enrichment items. In future studies it may be beneficial to provide one enrichment item at a time during experiments in order to determine the impact of individual items. Additionally, the time of day and current weather conditions when enrichment is offered are also likely to have an influence on animal-enrichment interaction. Future studies may also be enhanced by creating a detailed ethogram and data sheet that enables observers to differentiate between specific behaviors in each category. For example, in the category labeled active but not interacting with enrichment items (NI), differentiating between particular behaviors (e.g., scent-marking behaviors, digging, foraging, wrestling) would have provided further information.



Lewis with Boomer Ball®  
(Photo by Keith Lovett)

## Lewis

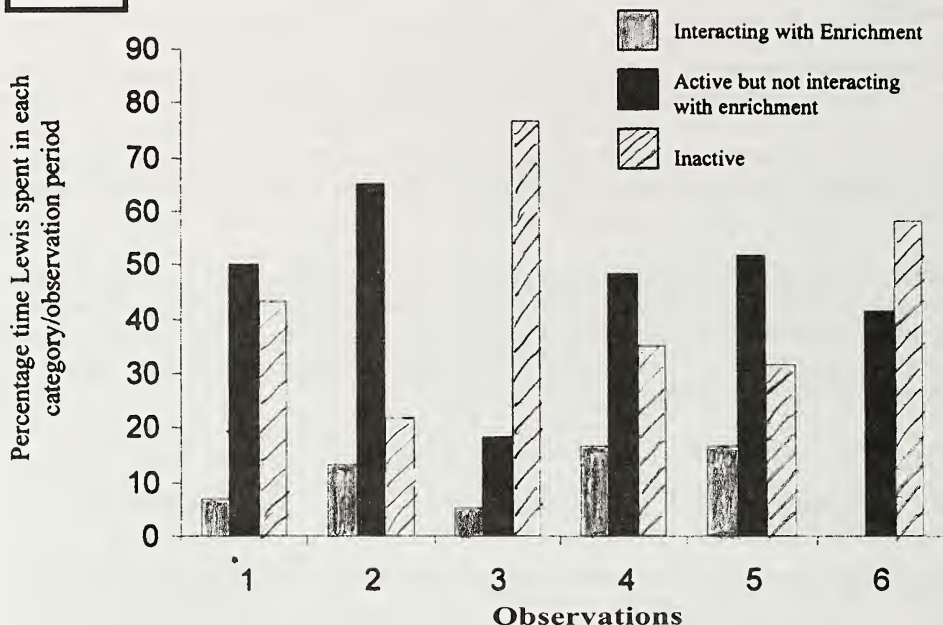


Figure 1. Percentage of time Lewis spent in each of the designated categories during two-hour observation periods over a total of six days.

## Clark

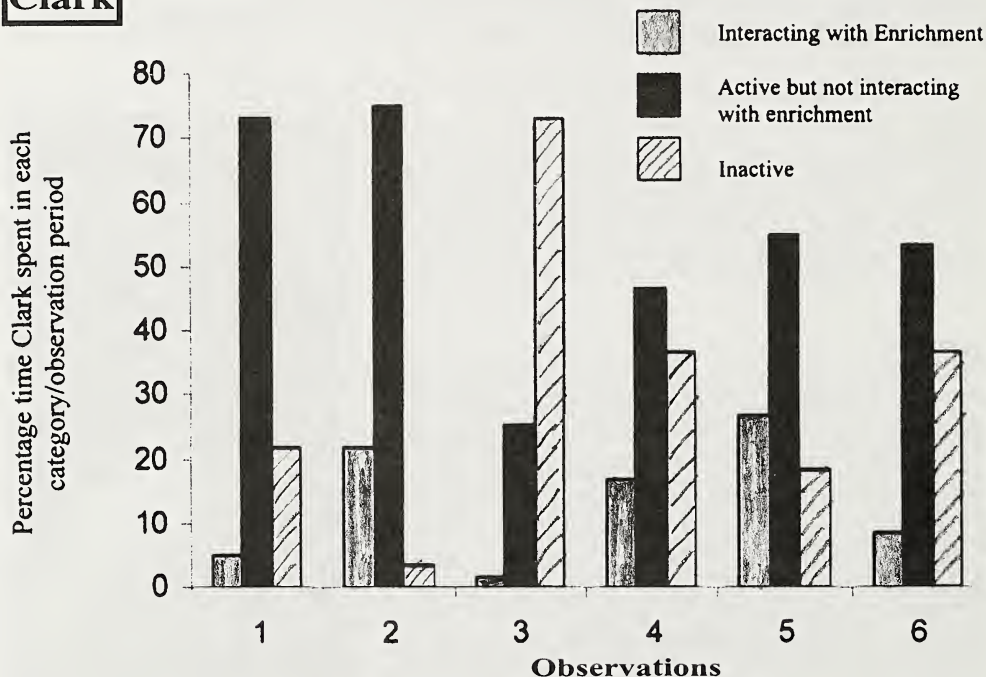


Figure 2. Percentage of time Clark spent in each of the designated categories during two-hour observation periods over a total of six days.



Although this study did have shortcomings, the information obtained is valuable. This brief study provided data that can be used to advance the enrichment program at the Palm Beach Zoo. Furthermore, this study provided a template that can be applied to any species at the zoo in order to assess the amount of time an animal is interacting with keeper-provided enrichment. Conducting enrichment research provides an opportunity to advance animal care standards and promote professional development throughout the zoo.



Lewis interacting with a feeding tube filled with edible treats.

*(Photos by Keith Lovett)*

### **Conclusions**

Providing enrichment is quite simple in theory. However, in practice, enrichment may often be a time-consuming effort for keepers. For example, creating a new puzzle feeder for primates may take several hours to construct and may provide only a few minutes of stimulation for the target animal. Furthermore, spraying perfume on the props may stimulate hours of activity with negligible keeper time investment. Therefore, evaluating the amount of time animals interact with enrichment is one method of measuring the effectiveness of the enrichment item.

In order to determine if enrichment is effective, enrichment programs must first have well-defined goals. These goals must have measurable results. The results must be discussed amongst the animal care teams and enrichment programs should be refined to reflect what was learned from gathering data during enrichment observation sessions. The quality of animal care is at stake.

As a model for future investigation into the effectiveness of environmental enrichment programs, this pilot study served a valuable purpose. Information generated from this study provided information regarding the individual response to enrichment items by each bear. These data provided additional support for the development of individualized enrichment plans for each animal, as each responds differently to enrichment. Additionally, data from this study provided a baseline for estimating time spent for each bear interacting with enrichment. This information can be used to refine the current enrichment program for the bears and establish new enrichment goals. As stewards of exemplary wildlife husbandry, pilot studies such as this can provided the stimulus to assess enrichment programs and raise the bar for animal care standards once again.

### **References Cited**

Shepherdson, D. Explanation of the AZA accreditation changes with respect to enrichment. 2002. *Animal Keepers' Forum* 29: 375-376.

# Bowling For Rhinos Funds Distribution for 2008

The distribution of "AAZK's Bowling For Rhinos - sponsored by Blue Rhino®" will follow these guidelines in 2008:

- Blue Rhino® Gas donation

(\$20,000/year - Split 50/50 between LWC and IRF):

- \$10K to LWC (Lewa Wildlife Conservancy in Kenya)
- \$10K to IRF (The International Rhino Foundation)



Funds are added to total BFR (Bowling For Rhinos) share.

LWC receives the first \$150,000 raised by BFR/year, plus \$10K from Blue Rhino®, guaranteed if BFR funds reach \$150,000.

All BFR funds over \$150,000 will now go directly to The International Rhino Foundation (IRF) for use in the Indonesian Rhino Parks of Ujung Kulon, Way Kambas, and Bukit Barisan Selatan. IRF gets the \$10,000, from Blue Rhino® added to their share.

The AAZK Board of Directors will be discussing the distribution of BFR funds during their midyear Board meeting in May. They hope to come up with a distribution program of funds that will better suite all parties as BFR continues to grow.

The 2007 Bowling For Rhinos events raised over \$316,000. This was the best year on record as the increasing trend continues. Congratulations for a fabulous year!

Bowling For Rhinos will soon break the \$3 million mark and we continue to reach for attaining our goal of \$500,000/year! Together AAZK can do it. We have and we will continue to make a difference in the conservation world.

Please send me your organizations contact person/contact info ASAP along with the date of your event. Reminder, there is a \$25 registration fee for BFR events which covers administrative costs so that 100% of all donation can go directly to rhino conservation. (See form on opposite page)

Please see <http://aazkbfr.org> or contact Patty Pearthree: [ppear3@pear3.org](mailto:ppear3@pear3.org)< We hope to merge the BFR website onto the AAZK website this year. If all goes well, for BFR info one would just go to the AAZK website of <http://aazk.org>.

## New Bowling for Rhinos Yahoo® Group Formed !

There is a new yahoo groups email for Bowling For Rhino Coordinators. If you would like to be part of this email group, please email Barbie Wilson at [rhinobarbie@hotmail.com](mailto:rhinobarbie@hotmail.com). This lets us communicate with other BFR coordinators with questions about t-shirts, bowling alley prices, how to get more support from your zoo, etc.





# Bowling for Rhinos 2008

(Feel free to photocopy this form to submit to Patty Pearthree)



It's time to start planning for "Bowling For Rhinos 2008". Please send in your information ASAP. There is a \$25 administrative fee for each event. Send check made out to AAZK, Inc. to Patty Pearthree, c/o BFR, 318 Montibello Dr., Cary, NC 27513. Remember, if you want to be eligible to win any of the trips being offered, all money must be sent to Patty Pearthree **by 1 September 2008**, and you **must** be a national AAZK member in good standing to qualify. If bowling isn't your thing, try "Rock'n for Rhinos", "Run For Rhinos" or send a Chapter or individual donation. Every penny counts toward saving rhinos worldwide! Questions? (919) 678-0449 or [ppear3@pear3.org](mailto:ppear3@pear3.org) website: <http://aazkbfr.org>

*Please Print Clearly*

Contact person: \_\_\_\_\_

Zoo/Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Province: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_

Phone: Day - \_\_\_\_\_ Night - \_\_\_\_\_

Email: \_\_\_\_\_

Will you be hosting a Bowling for Rhinos Event this year? YES NO

When? \_\_\_\_\_

Where? \_\_\_\_\_

How many Sponsor Forms do you anticipate needing? \_\_\_\_\_

If you like sample BFR letters/flyers/posters, they are available at the BFR website -

**<http://aazkbfr.org>**

Mail to: **Patty Pearthree**  
**c/o Bowling for Rhinos**  
**318 Montibello Dr.**  
**Cary, NC 27513**

Questions? (919) 678-0449 [ppear3@pear3.org](mailto:ppear3@pear3.org) website: <http://aazkbfr.org>

# Use of an Enrichment Program to Control Feather Destructive Behaviors in a Female Mauritius Pink Pigeon (*Columba mayeri*)

By

Heather Neldner, Zoo Keeper/Aviary Staff  
Milwaukee Aounity Zoo, Milwaukee, WI

Feather destructive behaviors are seen in several species of birds usually in relation to stressful events that can cause neurotic behaviors to develop. These behaviors can be reduced or alleviated through behavior modification, medication and by removing the stressor from the vicinity of the animal. (Sweat, 2005, Dicker, 2000; Clubb, 2006) The Milwaukee County Zoo (MCZ) has housed Mauritius pink pigeons (*Columba mayeri*) since 1995. This species is a medium-sized pigeon from the island of Mauritius and was once very endangered. There were about 15 pink pigeons in the wild in the early 1900's, in 2002 there were about 350. The main cause for their decline was predation by monkeys, feral cats and rats. A single cat has been recorded taking 45 to 50 pigeons in a couple of months. (Birds, 2002) The current captive population in American Zoo and Aquarium Associations is 92 birds. This paper looks at a single female Mauritius pink pigeon that has been held at the Milwaukee County Zoo since 1995, the history of feather destructive behavior and the solutions that have been implemented to increase quality of life.

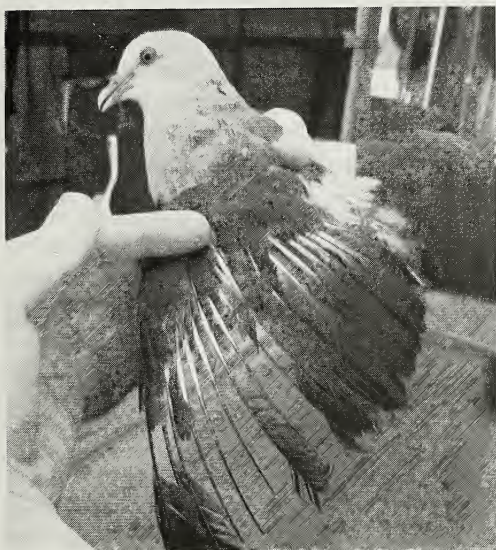
In 1995, the Milwaukee County Zoo acquired a female pink pigeon MCZ# B3160 to pair with a male on exhibit in the Aviary.† At this time the pink pigeon was managed as an AZA Species Survival Plan (SSP®). This pair of birds was housed in a large, well-planted cage, with gunite rock work and a large pool to drink out of and bathe in. The birds were on public display and the exhibit is separated from the public area with piano wires. At the time of acquisition the female was one year old. Over the course of four years this bird was introduced to four males, each of these introductions resulted in the female being traumatized by cage mates. Over time the bird's plumage steadily declined resulting in broken feather shafts and missing feathers. In 2003, it was determined by the veterinary staff that the bird was engaging in feather destructive behaviors. Some of these behaviors included debarbing the feathers down to the feather shaft. The overall plumage was very poor with areas of just downy feathers and some areas of bare skin. At this point in time the bird was treated medically and an enrichment and training program was implemented in 2005.

The pink pigeon was first given a physical exam by the veterinary staff in October 1996 to investigate the cause of the plumage issues. The overall exam included blood work, radiographs and a crop swab. At this time it was determined that the feather problems were due to trauma, resulting from an altercation between the female and the male Mauritius pink pigeon she was paired with at the time. The veterinary staff prescribed an antibiotic treatment and cage rest. Feather problems continued and a medical work-up with blood work was scheduled by the veterinary staff in January 1997, May 1997, December 1998, January 2003, March 2003, and April 2003. The veterinarians laproscoped the pigeon in January 1997 and again in 2002. In 2002, the female was separated from the current male but the feather condition did not improve. In March 2003, the pigeon was given a medical exam that included feather biopsies, cultures, and tests for Polyoma virus and Circovirus. All tests were negative. Antibiotics and cage rest were prescribed along with Sertraline® anti-anxiety medication. It was discovered that when the pigeon was kept at the full dose of the Sertraline® the feather condition improved; when the dose was gradually reduced the feather destructive behavior started again.

The veterinary staff also suggested that the bird might be affected by Seasonal Affective Disorder



(SAD) because the symptoms seem to correspond to the changing light patterns when the seasons changed. The staff had observed that when the light patterns got shorter during the winter months, the bird seemed to engage in increased feather destructive behaviors and when the light patterns got longer the feather destruction stopped.



At left: Wing prior to beginning of enrichment program. Above: Improvement in wing feathers as enrichment progressed. Below: Back and tail feathers prior to enrichment.  
(photos by Heather Neldner)

In addition to the medical treatment, several husbandry practices were employed to help improve the bird's feather condition. Some of these changes included lighting changes, Listerine® baths, misters and enrichment activities.

After researching proper lighting (Thrush, 2000, Lawrence, 2000) a UVA/UVB light was installed. It was hung on the outside of the cage close to a favorite branch. The light was installed at the end of June and the pigeon was first observed using it on August 18, 2005. The pigeon uses the light the most when it is cloudy outside, and rarely uses it when it is sunny. The staff has observed the pigeon sitting in the sunny spots in the cage and the bird will follow the sunny spots around the cage as the day goes on. The light was set on a timer which turned on at 0900 and off at 1500, which ensured the light went off at the end of the day.



One goal of the project was to document the pink pigeon's feather condition with photos to show any changes to the bird's plumage. Photos of the pigeon's feather condition were taken prior to bathing. Listerine® baths were given to the bird once a month. The Listerine® baths are given with a mixture of one part Listerine® to ten parts water mixed well, and delivered with a spray bottle. The bird was thoroughly soaked with this mixture. The staff noticed an immediate difference in the bird's plumage after the first bath. Listerine® baths do not deter the birds from picking or plucking their feathers, and the bird exhibits normal preening behaviors after the bath. Listerine® baths seemed to make the bird's skin less itchy and flaky and the feathers always looked cleaner and fluffier after the bath. Listerine® baths have been used successfully with parrots at another organization one of the staff members worked at. In addition, the staff added a poultry mister to the pigeon's cage so the bird can bathe on its own. The mister was turned on Monday, Wednesday and Friday for several hours each week.



The pink pigeon gets depressed when the light cycles shorten. The staff noticed that the pigeon spent a large amount of time sitting behind a potted tree in the cage. The staff also noticed that the bird seemed to get very depressed when it could not access the upper areas of the cage. The bird would over preen the wing feathers to the point where only feather shafts remain which inhibited the bird's ability to fly. Cage modifications were made including modifying perches to enable the bird to walk up the branches to access the upper areas of the cage and the tree.

On 10 February 2005 an enrichment program was started with the pigeon. All enrichment items go through a strict approval process. Each item needs to have a written approval by the curator and supervisor of the area and by the veterinary staff. All items go through an inspection process to ensure its safety and appropriateness for the species involved. Currently, 22 enrichment items have been approved for the pink pigeon, including parrot toys, rope toys and hiding baskets.

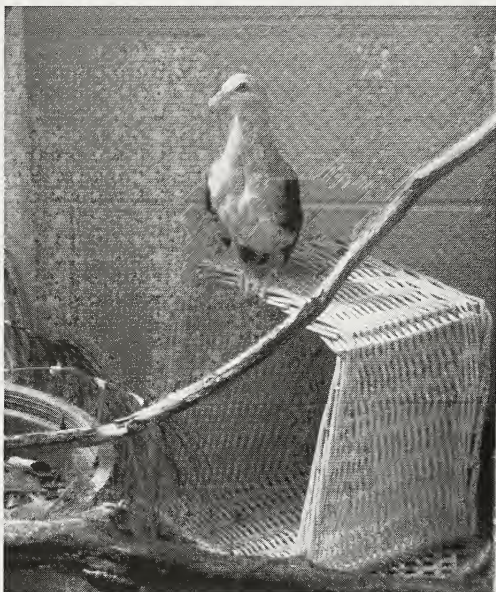
Enrichment items and different toys were introduced to the pigeon. The staff introduced toys using the following method:

- The toy was first placed in the empty cage next door, in the corner furthest away from the pigeon's cage.
- The item would slowly be moved towards the pigeon's cage, two inches at a time.
- When the item was up against the side of the pigeon's cage, the staff would move it along the cage wall, out the door of the cage and into the pigeon's cage.
- The staff continued to move the toy, two inches a day until it was in the final location in the cage.

Eventually the cage next door was used to house another bird, so all enrichment items were started outside the door of the pigeon's cage and introduced to the bird using the same two inch method. The pink pigeon has adjusted to the toys very well.

Over the course of a year 20 items have been introduced to the pigeon. The bird did not seem to mind any of the toys and no fear was observed. For the most part the bird seemed indifferent. The staff has observed that the pigeon enjoyed several of the items - romaine lettuce skewer (given once a week in addition to greens already in the diet); a wicker basket for hiding in; Goofy Links® toy; coconut/rope toy (coconut pieces and sisal rope); and a toy with fabric strips on it and plastic shapes on the bottom. The pink pigeon really liked the Goofy Links® toy and got frantic when the staff tried to remove it from the cage. Because of this, the toy is now a permanent fixture in the cage. The staff has never seen the bird playing with the toy, but often observe the bird sitting next to it.

The staff has observed that the pigeon takes a long time to discover the toys. All enrichment items are left in the cage for an extended period of time and several cage placements are tried to



"Yuna" sitting atop her wicker basket, one of her favorite enrichment toys. (photo by Heather Neldner)



encourage interaction before the item is removed. The pigeon will respond to a toy or item more readily and will interact with it during the spring and summer months when the bird is feeling its best. Since the pink pigeon was responding well to the enrichment and baths, it was decided to try reducing the medication. This was started on 18†May 2005. The normal dosage of Sertraline® is 0.4 ml orally, once a day. The medication was reduced by 0.1 ml each month over the course of the summer, until the dosage was 0.2 ml. It appeared that the pigeon was doing well on the reduced dosage of medication, and the bird was in nearly perfect feather condition from 18 August to 31 August 2005.

Unfortunately this was short lived. On 1 September 2005 staff noticed the bird was again destroying feathers. On 4 October the medication was increased back up to the full dosage (0.4 ml) to prevent further damage to the bird's feathers. Staff believed that the bird started mutilating the feathers again due to a lot of disturbance in the area in which the bird is housed. The bird appeared to handle changes to the cage environment well, but did not handle multiple changes at one time. When the changes were spaced out over a period of several days, the bird was able to handle the changes without problems.

The staff that regularly cared for the pigeon observed an unwillingness to accept medication when a series of unfamiliar keepers were introduced to the area. The problem was resolved by making everyone give the medication to the bird the same way each day. The medication was placed on some of the bird's favorite food items that included fruit mixture, cooked rice and romaine lettuce. There was also a preference shown for the type of container in which the food was presented. It was determined that the bird would eat consistently out of a small orange dish if it were used on a regular basis to deliver food and medication.

The staff at the Milwaukee County Zoo has worked hard at implementing a detailed medical and husbandry program that would, over time, improve the quality of life for the female pink pigeon. In summary the following has been observed in regards to this animal.

1. There is a pattern to the pigeon's feather-destructive behaviors. When the behavior is first observed the bird will start over preening on the lower back area. This typically occurs as the days are getting shorter and the feather-destructive behaviors increase rapidly. As the daylight lengthens the behaviors decrease.
2. As spring approaches and daylight lengthens the behaviors decrease.
3. Anxiety medication in conjunction with husbandry changes that included adding lighting, misters, an enrichment program and implementing a Listerine® bathing schedule reduced overall feather-destructive behaviors.
4. This bird was not suitable for paring within the Mauritius Pink Pigeon PMP® and was removed from the breeding population.

Initially the expectation was that the pink pigeon's feather-destructive behaviors could be solved with one or two solutions. This proved to be unrealistic. The bird had moments of improved feather condition, but it was discovered that the anxiety medication was a necessary component to her overall treatment program. The medication schedule coupled with husbandry changes created a scenario that improved the quality of life for this animal that was not achieved by implementing the program with only one or two components. The medication alone was not as affective in controlling feather destructive behaviors, and husbandry changes also could not alter the behaviors.

The bird's overall behavior and quality of life have improved over time. The pigeon has not been observed sitting in one area of her enclosure for long periods of time and now explores the environment. In addition the bird has utilized perching within the enclosure to access the cage and

the UVA/UVB light on cloudy days. The enrichment program has provided the bird with activities and toys with which she routinely engages and interacts. The overall feather condition has improved although it may never be 100% perfect due to a section on the lower back where the feathers do not grow in correctly. The area has sparse feather growth most likely due to the long-term over preening of the area. The pigeon is currently on 0.4 ml of Sertraline® and is doing quite well.



**At left:** “Yuna” getting a bath while sitting on author’s hand. (photo by Carol Kagy)

**Below:** “Yuna” returning to her cage after the bath--it shows how our training is paying off with her. She is now much more comfortable with her keepers and bathing is not a stressful experience anymore. (photo by Carol Kagy)



For the future, the staff at the Milwaukee County Zoo would like to continue to introduce novel enrichment items and evaluate the overall enrichment program to determine the most effective items and activities. The overall program described above will continue as long as the bird shows improvement in overall feather condition, changes to medication levels will be made as needed. A training program is currently being implemented to teach the bird to step onto the staff’s hands. This will allow the staff the opportunity to inspect the bird’s feather condition without having to manually restrain or capture it with a net.

### Acknowledgments

Kim Smith, Curator of Birds at the Milwaukee County Zoo; Ellen Saksefski, Area Supervisor, Aviary Milwaukee County Zoo; Victoria Clyde D.V.M., Associate Veterinarian Milwaukee County Zoo; and Carol Kagy, Zookeeper/Aviary, Milwaukee County Zoo.

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## Book Reviews

### **A SNAKE HUNTING GUIDE: Methods, Tools, and Techniques for Finding Snakes**

By Will Bird and Phil Peak

Published December. 2007 by ECO, Living Art, and Serpent's Tale

\$12.95 softcover 85 pages

ISBN-13: 978-0-978-89793-2

Available from: <http://www.reptileshirts.com>

<http://shop.serpentstale.com/category.sc?categoryId=11>

<http://www.zoobooksales.com>

About the authors: Both Will and Phil are passionate field herpetologists and founding members of the Kentucky Herpetological Society. Professionally, Phil works a "real job" and Will is employed by the Louisville Zoological Gardens.

This book is a fun read. Lots of information and ideas are jammed into its small and easy to read format. Its true value lies in realizing how much data and information can be collected by getting outside and enjoying weekends. The book clearly demonstrates that responsible and intelligent field work can add greatly to the body of scientific data.

Almost all the information in the species accounts is based on data from the author's field sites in and around Kentucky. Despite the regional nature of the work, the application of their methods is practical worldwide.

Snake hunting has become a pastime enjoyed by thousands. What was once considered a subculture is now recognized as a mainstream interest. The opportunity to experience snakes first hand in the field and to observe and photograph them in their native haunts holds great appeal. *A SNAKE HUNTING GUIDE* provides the reader with detailed information on how, when, and where to find snakes. Some of the topics covered include methods for finding snakes, tools used in snake hunting, and how to develop and enhance snake hunting sites.

For greater accuracy, comprehension, and ease of use, this book uses the traditional, standardized common names for North American species maintained by Collins & Taggart (2002. Standard Common and Current Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians. Fifth Edition), published by The Center for North American Herpetology (available as a pdf at the CNAH web site - <http://www.cnah.org>), and updated daily online, the only such listing available online worldwide. (Review from The Center for North American Herpetology, Lawrence, KS)

### **Hand-Rearing Birds**

Edited by Laurie Gage, DVM and Rebecca Duerr, DVM

2007 Blackwell Publishing, 2121 State Ave., Ames, IA 50014-8300

ISBN 978-0-813-80666-2

488pgs. Hardcover. Price: \$79.99

Thousands of individuals are devoted to the rehabilitation, raising, and conservation of birds. *Hand-Rearing Birds* will provide the reader with a guide to the best methods of hand rearing all major species of birds.

The book is broken into two sections. The first section covers standard hand raising methods and equipment. Included are General Care, Chick Identification and Incubation of Eggs. The second section provides individual chapters devoted to many major avian species. Included are Ratites, Penguins, Shorebirds, Ducks, Geese, Swans, Eagles, Hawks, Falcons, Condors, Domestic Poultry, Cranes, Parrots, Lorikeets, Owls, Hummingbirds, Hornbills and Toucans to name a few.

Also included in the second section are five chapters on Passerines including hand-feeding diets. The text is completed by three appendices: Appendix I - Important contacts; Appendix II - Nutritional tables; and Appendix III - Resources for Products Mentioned.

This book will be an invaluable reference for shelter veterinarians, zoo veterinarians, avian veterinarians, aviculturists, bird enthusiasts, and conservationists alike.

Available by calling 1-800-862-6657 or by visiting [www.Blackwell/Vet.com](http://www.Blackwell/Vet.com) Also available at [amazon.com](http://amazon.com)

### **Life at the Zoo** (now in paperback)

By Ohilip T. Robinson

2007, Columbia University press, 61 W. 62nd St., New York, NY 10023

ISBN 978-0-231-13249-7

312 pgs Paperback Price: \$17.95

Seasoned veterinarian Phillip T. Robinson shares his remarkable stories of working at the world-famous San Diego Zoo. In vivid detail he describes encounters with foulmouthed parrots, gum-chewing chimps, and stinky flamingoes, and the sometimes dangerous consequences of both human and animal interaction. He relates insider stories such as escaping the affections of a leopard that wanted to be a lap cat, training a gorilla to hold her newborn baby gently (instead of scrubbing the floor with it), operating on a semi-anesthetized elephant, and figuring out how to feed kolas in captivity, as well as why the zoo's polar bears were turning green.

Robinson's wildly entertaining tales illuminate the hazards and rewards of a world in which the "natural" and "unnatural" can collide, insightfully tracing the evolution of zoos from banal menageries to important conservation institutions. *New Scientist* said of the book "*Life at the Zoo* is more than a personal memoir of an illustrious career, it is a wise and witty reflection on all aspects of zoo life." A good read.

### ***And For The Younger Set.....***

#### **'Twas the Day Before Zoo Day**

By Catherine Ipcizade Illustrated by Ben Hodson

Sylvan Dell Publishing, 9076 Houston Northcutt Blvd., Ste 3, Mt. Pleasant, SC 29464

ISBN 978-1-934359-08-2 Hardcover \$16.95

ISBN 978-1-934359-24-2 Paperback \$ 8.95

This delightful adaptation of *'Twas the Night Before Christmas*, shares zoo keeper and animal preparations for the upcoming "Zoo Day". But things aren't going according to plan...the llamas won't quit spitting, the giraffes are drooling, and the zebras aren't happy at all with their stripes. Meanwhile, the zoo keepers are scurrying this way and that, cleaning up poop, ringing mealtime bells, and trying to get the animals bathed. Will "Zoo Day" go off without a hitch?

The illustrations are delightful and the Creative Minds section in the back of the book offers matching activities, fun animal facts, information about zoo keepers and more. A great gift for that special child on your gift list. Appropriate for ages 3-7 years old.



# Conservation/Legislative Update

Column Coordinators: Becky Richendollar, North Carolina Zoo  
and Greg McKinney, Philadelphia PA

This month's column was put together by  
column co-coordinator Greg McKinney



## Wildlife Conservation Society Measures Its Carbon Footprint

The Wildlife Conservation Society (WCS), which includes the Prospect Park Zoo and the New York Aquarium in Coney Island, has calculated its carbon footprint and is taking steps to reduce its greenhouse gas emissions. As a leader in global conservation, WCS aims to lead by example by taking steps to help New York City reduce its footprint by 30 percent by 2030.

"We can't be a leader in global conservation, if we don't also live it at home," said Steven E. Sanderson, president and CEO of the Wildlife Conservation Society. "Conservation globally, includes conservation at home. We strongly support Mayor Bloomberg's PlaNYC: A Greener, Greater New York, an effort to make our city a leading example of how we all can take steps to lighten our carbon footprint."

In 2007, WCS launched an effort to ensure its conservation practices at home were truly consistent with its global mission of protecting wildlife and wild places and to position the organization as a leader of New York City's greening plans. To that end, WCS created a Carbon Footprint Project Team to calculate its carbon footprint and then to implement steps to cut back on its emissions.

"The cultural sector anticipated many of the trends that inform the current focus on sustainability," said Kate D. Levin, commissioner of the New York City Department of Cultural Affairs (DCA). "Like many of our city's cultural organizations, the Wildlife Conservation Society is ahead of the curve in implementing creative design and operational practices to help reduce its carbon footprint, and DCA is proud to support these efforts."

The method to measure the footprint was guided by the Greenhouse Gas Protocol Initiative, led by the World Business Council for Sustainable Development, a coalition of 170 international companies and the World ecosystem preservation and climate change mitigation. The guidelines created by this partnership include tools developed with recommendations of the United Nation's Intergovernmental Panel on Climate Change for GHG emissions quantification. The U.S. Environmental Protection Agency has adopted the same reporting mechanism.

The team used data collected since 2005 and its assessment established a baseline against which future calculations and emissions mitigation efforts can be compared. This first report included calculations only at its New York facilities: Bronx Zoo, Central Park Zoo, Prospect Park Zoo, Queens Zoo and the New York Aquarium. The team calculated that the WCS operation (including five parks) in New York emits approximately 34,000 metric tons of greenhouse gases. The calculation includes direct emissions from heating and power generation at the five city parks and WCS-owned vehicles; emissions for purchased electricity by parks; emissions from organization activities — travel by air, car and train; and paper consumption. Prospect Park Zoo emits 1,632 metric tons metric tons of greenhouse gases.

"This footprint assessment is only our first step in this process," said Sanderson. "Our goal was to look at our largest institutions at home to begin this process. We now have a baseline to compare future carbon mitigation strategies. The process of assessing our footprint is now ongoing and will help generate ideas and strategies to reduce consumption and improve efficiency."

For example, at both the Aquarium and the Bronx Zoo, waste cooking oil is collected and turned into soap. *Source: Brooklyn Daily Eagle, 24 January, 2008*

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## **San Diego Zoo and Polar Bears International Form Conservation Alliance**

As the United States Fish & Wildlife Service considers the listing of the polar bear (*Ursus maritimus*) as a threatened species, members of the Polar Bears International advisory council met in San Diego recently to discuss the future of this bear and the role of zoos as educators and conservation partners.

The San Diego Zoo and Polar Bears International announced they are forming an alliance to establish a conservation program, "Arctic Ambassadors," that will involve zoos and researchers around the world.

"As climate change impacts the extent of arctic ice, more research and education are needed to protect polar bear populations," said Ron Swaisgood, Ph.D., head of Applied Animal Ecology at the San Diego Zoo. "By partnering with Polar Bears International, the San Diego Zoo has a unique opportunity to assist in polar bear conservation by focusing research on those questions that are best addressed in zoos and will have useful application both here and in the wild. The polar bear has much to gain from this alliance."

Polar Bears International has already funded three San Diego Zoo polar bear research projects. One ongoing program is studying the bear's hearing sensitivity to help determine the impact of human-generated noise, such as oil drilling, on this species.

"Under the guidance of this program, zoos throughout the world will help educate and inspire millions of people by establishing Arctic Ambassador Centers," said Robert Buchanan, Polar Bears International president. "PBI and the San Diego Zoo will work together to build an extensive network of Arctic Ambassadors to become champions for this sentinel species by inspiring, informing, and empowering change."

Arctic Ambassadors will include some of the world's top leaders in polar bear education, research, and husbandry issues. The San Diego Zoo will become an active participant in Polar Bears International's field research initiatives, including the Polar Population Project (Tri-P), which is designed to establish census counts, track the movement of the bears and determine the location of geographic pockets where the species might be able to survive the current period of climate change.

Together, the Zoo and PBI will continue conservation projects researching poorly-understood aspects of polar bear reproduction, sensory ecology, mother-cub behavior and cub development as well as how these systems are impacted by humans and a changing environment. The alliance will provide worldwide leadership in polar bear husbandry areas such as behavior, nutrition and veterinary care.

Education will also be a key component of Arctic Ambassadors. Not only will this program generate scientific information to support conservation, it will become a vanguard messenger for the polar bear conservation crisis and the threats facing the arctic and the globe due to climate change. During the 2008 Year of the Polar Bear, Arctic Ambassadors will include Polar Bears International's Leadership Camp in Churchill, arctic distant learning initiatives, a world lecture series, interactive education, a National Teen Contest, a teaching curriculum, polar bear tours with scientists, an online game, an interpretive center and a Web-based education center. *Source: San Diego Zoo, 31 January 2008*

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## **Chaffee Zoo Helps Restore Addax to Wild**

An African antelope species nearly extinct in the wild is getting a boost from Fresno Chaffee Zoo. In its first-ever effort to help rebuild an endangered animal population in a natural habitat, the zoo has relinquished ownership of two addax (*Addax nasomaculatus*), a type of white antelope with spiral horns that has all but disappeared from the Sahara. The zoo also kicked in \$500 toward the \$7,000 cost of shipping each animal to Tunisia, where they were released into a wildlife reserve in December along with seven other addax from American zoos.

The Sahara program was a rare opportunity for Fresno's zoo to take a direct role in promoting global biodiversity — a part of the zoo's mission that is not always easy to carry out. The cost, the need for international cooperation and the logistics of finding suitable natural habitats for release all are obstacles, officials said.

Neither addax returned to the wild ever lived at Fresno Chaffee Zoo, but as a result of breeding programs, zoos often own animals that live in other zoos. One was the offspring of an addax born in Fresno. The other was born in the San Diego Wild Animal Park to an addax that was on loan from



Fresno. That connection was enough to enable Fresno to join the international effort to save the species.

“Fresno is participating in a huge program and contributing just as much as any of the zoos,” said Steve Shurter, Director of Conservation at White Oak Conservation Center near Jacksonville, FL, and chairman of the Association of Zoos and Aquariums’ antelope advisory group.

The addax is critically endangered. The species has been virtually hunted out of existence, and far more addax live in zoos than are left in the wild. As recently as the early 20th century, tens of thousands of addax — possibly hundreds of thousands — roamed the Sahara Desert in northern Africa. Today, only 250 addax survive there, according to estimates. About 600 live in American and European zoos, said Andy Snider, Fresno Chaffee Zoo’s Director of Care and Conservation.



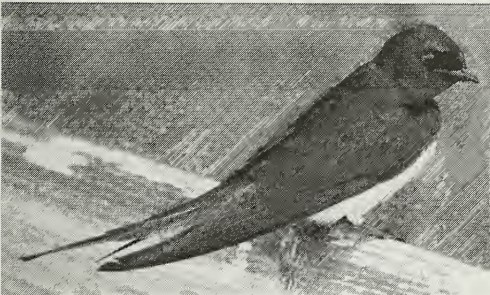
(photo: Wikipedia)

In the late 1980s, European zoos began participating in the addax reintroduction program in Tunisia, contributing about 20 animals. A handful also were donated from San Diego Wild Animal Park. For the last four years, more American zoos have been helping in the effort to restore the addax, primarily to increase genetic diversity in the population and give the species a better chance of survival. Today, the Tunisia reserve’s addax population has grown to about 70, allowing new wildlife reserves to be built elsewhere in Tunisia. Eventually fences around the reserves will be removed, and the animals will be allowed to roam their native lands across national borders. In Tunisia, the addax is being reintroduced along with the scimitar-horned oryx (*Oryx dammah*), a larger relative also once common to the Sahara that no longer survives in the wild. About 900 oryx remain in captivity, including five at Fresno Chaffee Zoo. Source: *The Fresno Bee*, Marc Benjamin, 31 January 2008

### Roost of Millions of Migratory Swallows Threatened

The Bronx Zoo-based Wildlife Conservation Society has called for protection of a recently discovered site in Nigeria where millions of migratory swallows (*Hirundo rustica*) gather to roost each night.

Wildlife Conservation Society scientists say the site is only one of two known roosts in Cross River State, a coastal region in southeastern Nigeria. The site is approximately two kilometers outside of Cross River National Park. Preliminary surveys by WCS indicate that the site may attract millions of swallows and be of international significance.



(photo by Malene Thyssen)

The roost appears to be under threat of destruction from advancing farms and may require conservation measures to survive, according to WCS, which has already contacted park officials to see if the roost can be formally protected.

“The fact that swallows congregate in large numbers in the winter makes them vulnerable to hunting and could have a significant impact on numbers if protection is not given,” said Andrew Dunn, of the Wildlife Conservation Society’s Nigeria Program. Swallows that winter

in Africa migrate each spring to areas in Europe and Asia. While they are not endangered, their numbers are declining.

The other swallow roost in Cross River State, at a site known as Boje, is considered one of the largest swallow roosts in Africa. However, it has suffered in recent years from hunting by local people, who capture the swallows for food. Still, it remains an important destination for tourists who come to see the spectacle of millions of birds gathering in a relatively small area each night.

Source: *wcs.org*, 4 February 2008

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## Unidentified Ailment Threatens Bat Populations

Responding to an unprecedented die-off of thousands of bats in New York, biologists and researchers from around the country are working to identify a fungus found on hibernating bats, and to assess the threat to bat populations nationwide. The disease, dubbed white-nose syndrome because of the presence of a white fungus around the muzzles of some affected bats, is a major concern to the bat conservation community.

White-nose syndrome was first detected at caves and mines in New York last winter, where it is believed to be associated with the deaths of approximately 8,000 to 11,000 bats. This winter the disease has again been found at the previously infected New York sites, and has spread to several other sites there as well as one site in Vermont. Although the fungus is believed to be associated with the die-off, it is unknown if it contributed to the deaths or whether it is a symptom of another problem. Because it is not known how the disease spreads, cavers in New York and Vermont have been asked to avoid entering caves and mines until more information is available. No impacts to humans have been reported to date.

Wildlife managers are concerned about the outbreak because bats congregate by the thousands in caves and mines to hibernate during winter months. This behavior increases the potential that the disease will spread among hibernating bats. In addition, hibernating bats disperse in spring and migrate, sometimes hundreds of miles away, to spend the summer.

Most bats affected to date are little brown bats (*Myotis lucifugus*), but the fungus has also been found on endangered Indiana bats (*M. sodalis*), raising concerns about the impacts on a species already at risk. Other affected bat species include the eastern pipistrelle (*Perimyotis subflavus*) and the northern long-eared bat (*M. septentrionalis*). Indiana bats, protected by the federal Endangered Species Act, as well as state laws, range across much of the eastern United States. Indiana supports the largest hibernating population of the species. About 238,000 Indiana bats, approximately 46 percent of the total population, winter in Indiana caves. Another 15 states have populations of hibernating Indiana bats.

Updates on white-nose syndrome will be posted on the US FWS website ([www.fws.gov](http://www.fws.gov)) as they become available. *Source: US Fish & Wildlife Services, 4 February 2008*

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## Madagascar's Tortoises Are Crawling Toward Extinction

Madagascar's turtles and tortoises, which rank among the most endangered reptiles on earth, will continue to crawl steadily toward extinction unless major conservation measures are enacted, according to a recent assessment by the Wildlife Conservation Society and other groups.

The groups, which met for four days in Madagascar's capital city Antananarivo, said there is still hope to save these ancient animals, but time is running out as their habitat continues to shrink and illegal hunting worsens. Five of the nine assessed species have been downgraded to critically endangered, with one variety — the ploughshare tortoise (*Geochelone yniphora*) — now numbering only a few hundred individuals. The other critically endangered species include the radiated tortoise (*G. radiata*), flat-tailed tortoise (*Pyxis planicauda*), spider tortoise (*P. arachnoides*) and Madagascar big-headed turtle (*Erymnochelys madagascariensis*), all of which are found nowhere else on earth.

"Madagascar's ancient tortoises and turtles are marching toward extinction unless an all-out effort is made to protect these living national treasures," said Dr. James Deutsch, director for the Wildlife Conservation Society's Africa programs. "The good news is that there's still time to save Madagascar's tortoises and turtles from extinction, and we know how to tackle the issues."

The workshop participants concluded that illegal trade continues to be the largest single threat for several of critically endangered species. Ploughshare, spider and flat-tailed tortoises, along with juvenile radiated tortoises, are particularly coveted by collectors and traded as pets on the international black market. Meanwhile, adult radiated tortoises are sold for food in regional markets in Tuléar and Fort-Dauphin.

In order to combat these illegal activities, the workshop participants recommended the creation of a "tortoise brigade" to monitor and control illegal trade. Confiscated tortoises could be repatriated to areas where populations had been decimated by illegal trade, and with subsequent enforcement eco-tourism opportunities could follow.



More so, the participants recognized that Madagascar's traditions that once protected tortoises needed to be revitalized. Therefore, working with local people was identified as an essential component of any future conservation effort. The groups went on to say that more survey work was needed to identify unprotected tortoise populations, as well as increased captive breeding and reintroduction efforts.

The Wildlife Conservation Society, which operates field projects throughout the island nation, will open Madagascar! on June 19th — a new exhibit at its Bronx Zoo headquarters that showcases the country's amazing biodiversity including radiated and spider tortoises. The exhibit will also be a state-of-the-art energy efficient, green building, and the first land-marked building in New York to receive a Leadership in Energy and Environmental Design (LEED) gold certification. *Source: ScienceDaily; Wildlife Conservation Society, 7 February 2008*

### Group Seeks to Protect Pacific Walruses Under Endangered Species Act

Pacific walruses (*Odobenus rosmarus divergens*) are not protected under existing regulatory mechanisms, according to a conservation group, so it turned to the Endangered Species Act. The Center for Biological Diversity petitioned the U.S. Fish and Wildlife Service to list walruses as threatened because their sea ice habitat could disappear in summers due to global warming and drastically shrink in winter.

"The Pacific walrus is an early victim of our failure to address global warming," said Shaye Wolf, a biologist for the conservation group in San Francisco and the principal author of the petition. "As the sea ice recedes, so does the future of the Pacific walrus."



(photo: NOAA)

Bruce Woods, a spokesman for the U.S. Fish and Wildlife Service in Anchorage, said the law calls for a review to determine whether the petition contains "substantial information" within 90 days if practicable. If the petition passes that first hurdle, the agency would have nine months to perform a status review on walruses. Oil and gas development off the Alaska and Russian Far East coast also threatens the animals, according to the petition. Walruses

use sea ice as a platform to dive to the ocean bottom to feed on clams, snails, crabs, shrimp and worms. They cannot swim indefinitely and females and their young traditionally ride the ice north in spring and summer over offshore foraging areas, first in the northern Bering Sea, then into the Chukchi Sea. An adult walrus can eat 200 pounds of clams in a day.

Sea ice last summer receded to 1.65 million square miles, the lowest level since satellite measurements began in 1979, according to the National Snow and Ice Data Center at the University of Colorado. In September, sea ice was 39 percent below the long-term average from 1979 to 2000. Sea ice in the Chukchi Sea receded well beyond the shallow outer continental shelf over water too deep for walruses to dive to reach clams. Rather than staying on ice, many walruses congregated on Alaska's northwest shore and in Chukotka on the Russian side.

Wolf said she became interested in the threat to walrus as she worked on a petition to list ribbon seals (*Phoca fasciata*) as threatened. She said action must be taken to stop the loss of sea ice. "I'd like to see a national strategy to immediately and drastically cut our greenhouse gas emissions," she said.

Scientists at the National Snow and Ice Data Center have said they do not expect summer sea ice to bounce back without changes in current warming trends. Mark Serreze, senior research scientist, said in December that summer sea ice could disappear by 2030. Two scientists at the Naval Postgraduate School in Monterey, Calif., said last month the Arctic Ocean could be entirely ice-free during the summer months by 2013. Wieslaw Maslowski, research associate professor in the Navy school's Department of Oceanography, and researcher Jaclyn Clement Kinney modeled and monitored Arctic ice melt. The petition also said walrus are likely to be affected by petroleum development. The U.S. Minerals Management Service on February 6 accepted high bids on 2.76 million acres of Chukchi Sea ocean bottom. *Source: Associated Press, Dan Joling, 8 February 2008*

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### **New Species of Large monkey Discovered**

A New Zealand researcher has discovered a new species of large monkey living in the Amazon region of South America. "Finding a relatively large monkey as a new species these days is pretty cool," said Jean-Phillipe Boubli of Auckland University's anthropology department. "It shows how little we really know about the biodiversity of the Amazon."

Boubli said the discovery was one of the most exciting and important of his career. The find has been announced in the *New Scientist* magazine and will be detailed in the *International Journal of Primatology* in July.

The discovery was a result of a series of surveys conducted by Boubli from 1991-2007 which focused on the little known and hard to reach Pantepui region of Brazil. Boubli said he found the animal after following native Yanomamo Indians on their hunts along the Rio Araca, a tributary of the Rio Negro in Brazil.

"They told us about this black uakari monkey, which was slightly different to the one we knew from Pico de Neblina National Park, where I'd worked earlier," said Boubli. "I searched for that monkey for at least five years. The reason I couldn't find it was because the place where they were was sort of unexpected." Boubli said the monkey lives in social groups and is likely to be a seed-eater.

Uakaris normally live in flooded river forests, but this one turned up in a mountainous region on the Brazil-Venezuela border. Another species of primate in that region which was very similar to the uakari competed in the same ecological niche, Boubli said. "Wherever that monkey occurs, you don't expect to find uakaris," he said. "That's why I wasn't really looking in those places." The new species appeared confined to a very small area outside any reserve. Boubli said the population was quite small, so the species was vulnerable.

"We're going to have to create a park or reserve, because (its habitat is) not a protected area," he said. The species was not only vulnerable to regional epidemics, droughts, fires and global warming, but because it lived on public land it could be hunted. Throughout Northern Amazonia, uakaris are regularly eaten by local people.

Boubli named the new monkey *Cacajao ayresii* after Brazilian biologist Jose Marcio Ayres. Ayres was a senior zoologist for the Wildlife Conservation Society when he died in 2003, after helping to create a protected zone in the heart of the Amazon. *Source: Associated Press, 5 February 2008*

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### **Tiger Populations Plummet Worldwide**

The wild population of all tigers - including Bengal, Sumatran, Siberian and Indochinese tigers - stands at a maximum of 7,000 and a minimum of 5,000, according to figures from the World Wildlife Fund.

In southern China, the WWF estimates there are a mere 30 tigers in the wild, making them functionally extinct. In 1993, China became a signatory of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), an international treaty that includes nearly 170 member countries. China put a long awaited ban on trading tiger bones, flesh and skins.

However, tiger farms, where the WWF estimates about 4-5,000 tigers are bred for their body parts, have been set up to circumvent laws. Owners and investors in these farms have set up a strong lobby to have the current laws repealed as the Internet opens a new frontier for sales in tiger parts and products made from tiger skin and bone, according to the group TRAFFIC, which monitors the trade in endangered species.

While China maintains the death penalty for wildlife crimes ranging from poaching to trafficking, growing affluence has put many exotic foods within the reach of more people.

Willem Wijnstekers, head of the Secretariat of the Convention on International Trade in Endangered Species (CITES), has likened controlling illegal imports and exports in China to mopping up the floor with the tap running. *Source: CNN.com/Asia February 5, 2008*



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